

MONTHLY

APRIL, 1928

No. 267

HITCHCOCK'S MACHINE TOOL BLUE BOOK

DIRECT MAIL ADVERTISING

to

*Industrial Machine Shops
Automotive Plants
Railway Mechanical and
Purchasing Departments*

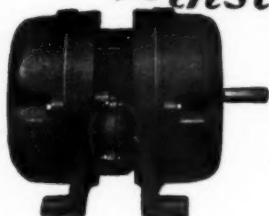
**AND ALL OTHER
MACHINE TOOL
USERS**

**Controlled Circulation
25,000 Monthly**

Published By

**HITCHCOCK PUBLISHING CO.
508 So. DEARBORN ST.
CHICAGO**

Stays clean *~inside!*



The Reliance fully-enclosed fan-cooled construction offers the easiest way to reduce maintenance costs and prolong the life of your induction motors. You can place the motors in dirty locations and be sure that the windings will stay clean.

You get this protection at low cost and in most cases without increase in size over an open motor of the same rating. No pipes, no complicated construction.

For details get Bulletin 102.

Reliance Electric & Engineering Co.
1050 Ivanhoe Road, Cleveland, Ohio

Branches: Boston; New York; Pittsburgh; Cincinnati;
Detroit; Buffalo; Chicago; Birmingham

RELIANCE ^{AC} MOTORS

with Ball ^{DC} Bearings

To Blue Book Readers

This book is complimentary.

It is hoped that you appreciate it as you would a railroad pass or a "comp" to the show—in proportion, of course.

It has been the endeavor of the publishers to make the BLUE BOOK to your liking. Its handy size is for your convenience. You can look through its clean-cut offerings from cover to cover without tiring. And it occupies but little space if you keep it within easy reach for reference.

By devoting only a few minutes a month to a careful perusal of the BLUE BOOK, you will find during the year many useful things, some of them new, in which you will be deeply interested. And as there are 25,000 of you, the publishers can be justly proud of such a wonderful company of appreciative readers.

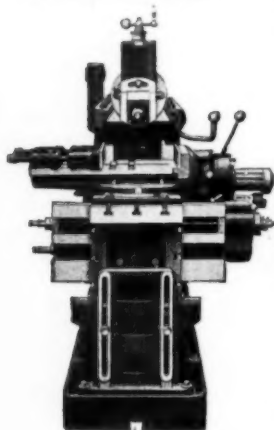
It is possible, too, that you may feel inclined to drop us just a line or two, in either criticism or commendation of our plan of advertising. If so, we shall be mighty glad to hear from you. We like to know how it appeals to YOU.

Address any communications to the Hitchcock Publishing Co., 508 S. Dearborn St., Chicago, and thank you.

A Modern Machine For Modern Manufacturing

HERE is a machine—modern in every detail—the efficiency of which has been thoroughly tested and proved beyond a doubt. Ability to perform all classes of work at the highest speeds and coarsest feeds practicable and, at the same time, turn out a finished product of unquestioned accuracy at savings of 50% and more—all this you'll find in the New

"AMERICAN" AUTO-OILED SHAPER



Points of Superiority

**Tremendous Cutting Power
Unparalleled Rigidity
Permanent Accuracy
Automatic Forced Lubrication
Multiple Splined Shafts
Timken Roller Bearings
Multiple Disc Clutch and Brake
Helical Gears—Alloy Steel
(Hardened)
"V"-Type Ram
Improved Table Support
Tu-Piece Bull Wheel
Centralized Control**

Write for illustrated booklet and see how Shaper design has been revolutionized in the New "American" Auto-Oiled Shaper.

The American Tool Works Company

LATHES Cincinnati, Ohio, U. S. A. **RADIALS** **SHAPERS**

HISEY PRECISION GRINDERS

Tool Post — Angle Plate Combination External - Internal

Are quickly and easily applied to any machine tool. They enable you to handle external and internal grinding jobs to any required degree of precision. The saving involved in grinding with the original set up, and the number of operations that can be handled more profitably with these grinders is surprising.



Tool Post Grinders

Made with and without horizontal slide in $\frac{1}{4}$ and $\frac{1}{2}$ H. P. Sizes.

Angle Plate Grinders

Made in $\frac{1}{4}$, $\frac{1}{2}$, 1, 2, 3, 5 and $7\frac{1}{2}$ H. P.
For Vertical Grinding made in 1, 2, and 5 H. P.



Combination External and Internal Grinders

The internal spindle can be removed and grinder can be made into an external grinder as shown above. Open type spindle as shown made in $\frac{1}{4}$ H. P.

Combination External-Internal Grinder

With enclosed type spindle made in $\frac{1}{2}$ and 1 H. P.



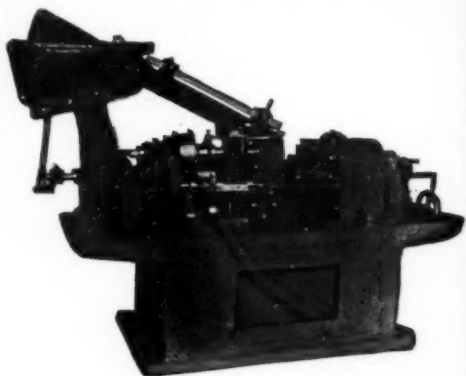
Write for Catalog H35

The Hisey - Wolf Machine Co.

Manufacturers of Quality Electric Drills, Grinders and Buffers

Cincinnati, Ohio

Authorized Distributors Everywhere



Economy Automatic Combined
Pointing and Threading Machines

**REDUCE
BOLT COSTS**

THE ECONOMY ENGINEERING

WHY ?

- t— One Man Runs Four Machines.
- nd— Machines Full Automatic—Eliminates Human Element.
- rd— Pointing Operation Free.
- th— Saves Handling From Pointer to Threader.

RESULT

Increased Profit for Manufacturer

COMPANY, - Willoughby, Ohio

RED STREAK

High Speed Steel

Power

Hack Saw

Blades



Made by
SIMONDS
Saw and Steel
Company
of
Simonds
High Speed
Steel

In the following sizes

Length	Width	Thickness	Teeth
12-inch	1-inch	.058	6 or 10
14-inch	1-inch	.058	6 or 10
17-inch	1-inch	.065	6 or 10
18-inch	1-inch	.065	6 or 10

Write us for details

Simonds Saw and Steel Co.

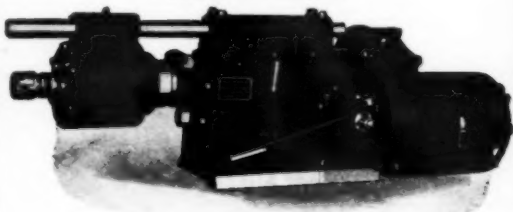
Established 1832

Fitchburg, Mass.

BRADFORD

Unit Type Drill Heads— Also Tapping Heads

PATENTS PENDING



No. 1 Tapping Head with 6 inch stroke

A self contained motor driven unit designed for one or more heads to be built into one unit at *any angle from horizontal to vertical.*

Capacity of Drill Heads with 3" or 6" stroke, $\frac{1}{4}$ " to $1\frac{1}{2}$ " in steel.

Capacity of Tapping Heads with 3" or 6" stroke, from 0 to 1" in Steel.

Spindle speeds from 75 to 2000 R. P. M.

Heads made for single and multiple spindle drilling and tapping.

A Trial Will Convince You

The BRADFORD MACH
CINCINNATI, *Establish*

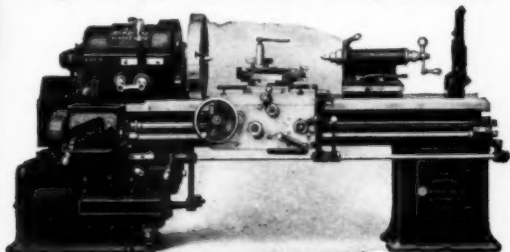
BRADFORD

PATENTED

"All Geared"

LATHES

Single Pulley or Motor Drive with Apron Control



18 inch "Quick Change" Gear Lathe

BRADFORD "All Geared" LATHES have tremendous power, yet are practically vibrationless even when pushed to the limit. Tooth and chatter marks are absent. Every strain tendency in the head is *downward*, drive is from beneath, tool thrust locks head tighter to bed. Force feed lubrication which distributes a measured quantity of FRESH oil to 33 surfaces can be furnished.

Made in sizes 14" to 48"

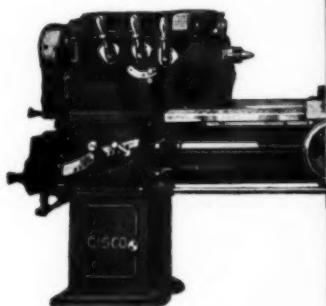
We also manufacture high grade Cone Type Lathes in sizes from 14—48 inches, and special production machinery.

Write Us Today for Complete Information

INE TOOL COMPANY

ed 1840

OHIO, U. S. A.



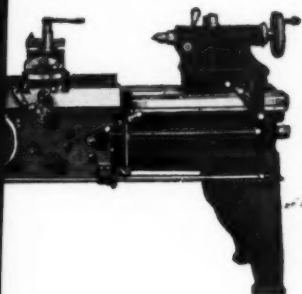
CISCO

For almost twenty-five years CISCO Lathes have been giving dependable service in plants throughout the country.

Every CISCO installation, from the smallest repair shop to the largest industrial plant, operates at a very low maintenance cost.

The rugged construction of CISCO Lathes, along with the very best of materials prevents breakdowns. The generous dimensions and the well balanced weight insure greater strength.

The Cisco Machine Tool Co.,
CINCINNATI,



LATHES

The accuracy of CISCO Lathes has not been overlooked.

Every part is carefully inspected and thoroughly tested, by competent inspectors. The lathe is tested for accurate chasing of threads, finish cuts without chatter, and for an accurate alignment of .001" or better in 18".

Let us send you complete information. There is no obligation. At least find out what CISCO Lathes can do for you.

1700-1703 Elmore Street
OHIO, U. S. A.

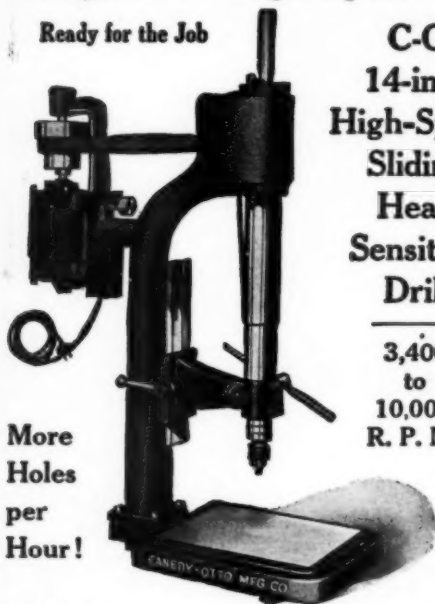
Designed for High Speed Work

Ready for the Job

C-O
14-inch
High-Speed
Sliding
Head
Sensitive
Drill

3,400
to
10,000
R. P. M.

More
Holes
per
Hour!



Total height, 41".
Vertical adjustment of head, 7½".
Diameter of spindle, ¾".
Travel of spindle, 3¼".
Maximum distance of bottom of chuck
to base table, 10"½.
Size of base table, 9½" x 12½".

Speed of spindle, 3,400-5,600-10,000.
Largest size of drill, 5/16".
Distance from column to center of sp. 7¼".
Size of sp. pulley, 1½"-2¼"-3" x 1¼" face.
Bench space, 15" x 20".
Net weight, 180 pounds.
Crated weight, 220 pounds.

Complete Information gladly furnished

Canedy-Otto Manufacturing Company

Main Offices and Factory—Chicago Heights, Illinois

New York Branch
407 Broome St.

Complete stock
carried at branches

San Francisco Branch
955 Folsom St.

The Improved Canedy-Otto No. 29

Ready for the Job



3 Spindle Speeds
720-1430-3000 R. P. M.

Completely
Motorized—
Also Furnished
Belt Driven

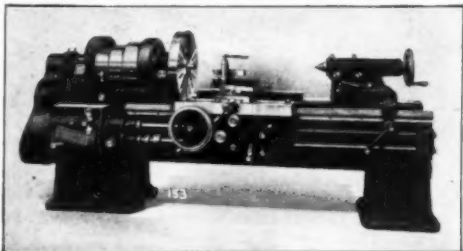
The Improved Canedy-Otto Sensitive Bench Drill comes complete with toggle switch, cord, socket, $1\frac{1}{2}$ " endless leather belt, and chuck. The motor is adjusted on a sliding base that maintains the proper tension on the belt at all times, and cuts lost motion and vibration to the minimum. Now equipped with a 3-step cone pulley which gives three spindle speeds of 720, 1430 and 3000 R. P. M. Complete information, with close price, upon request.

Canedy-Otto Manufacturing Company

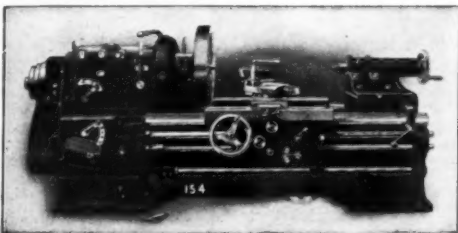
Main Offices and Factory—Chicago Heights, Illinois
New York Branch 407 Broome St. Complete stock carried at branches San Francisco Branch 955 Folsom St.

Cincinnati Lathes

have demonstrated over 20 years in shops everywhere to give longest satisfactory service. Seldom you find them offered in second hand lists.



We furnish our latest lathes either Cone Type as in cut No. 153 or Geared Head type with single pulley belt drive as in cut No. 154 that may be converted over to motor drive at any time after installation. Sizes 16" to 32" furnished with standard or special attachments if required.

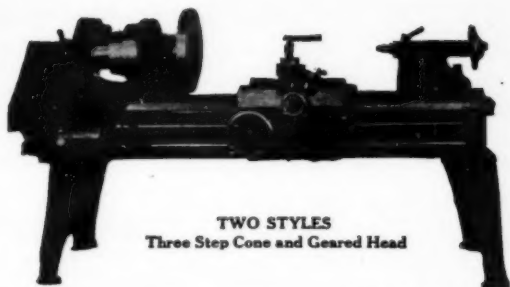


Specify Cincinnati Lathes and be sure of the quantity also quality work you produce.

The Cincinnati Lathe and Tool Co.

3207-3211 North St., Oakley,

Cincinnati, O.



TWO STYLES
Three Step Cone and Geared Head

16" x 6' New Design \$525.00
Weight 1900 lbs.

18" x 8' New Design \$585.00
Weight 2100 lbs.

3-step cone, double back gear, quick change gear, graduated compound rest, steady rest, lead screw and feed rod, tool post, centers, countershaft and wrenches, ready to run.

A lathe in the **INEXPENSIVE** class, for your shop equal to, in all respects, lathes of much higher price, having all their features:

Alignment and Precision
Speed in Production
Ease of Operation
Ability on all Work
Low cost of Upkeep
INEXPENSIVE COST to YOU

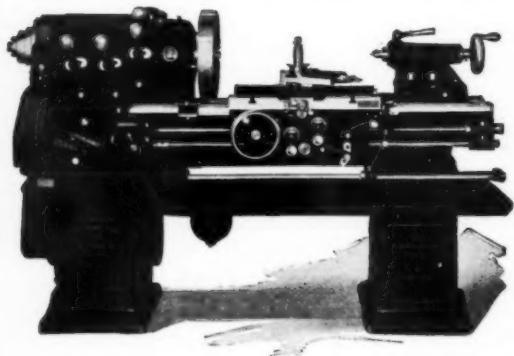
Made in 16" and 18" swing from 6' to 18' length of bed. Either 3-step cone belt drive or All Geared 9-Speed Drive Head for 2 H. P. Motor.

*Write us for full information and **PRICES***

The Rahn - Larmon Co.
2943 Spring Grove Ave., CINCINNATI, OHIO

Modernize Your Lathe Equipment with

Monarch Ball Bearing Helical Geared Head Lathe



Monarch Helical Geared Lathes combine speed (productive capacity), smooth work (no gear tooth marks), noiseless operation and an ease of handling (time saving), that has never heretofore been obtained.

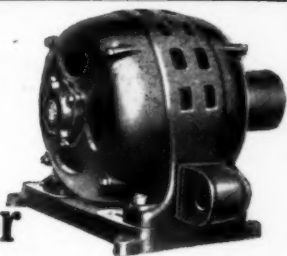
The Helical Gears have $3\frac{1}{2}$ teeth always in mesh. In operation they are noiseless, smooth and powerful.

Greater production is insured, because of the higher speeds obtainable and of the many operating conveniences.

Glad to tell you how these modern lathes, from 14 to 30 in., increase production; how they are built; how the Monarch Dual-Control and other features save time. Write—

The Monarch Machine Tool Co.

Sidney, Ohio, U. S. A.



The motor without a compromise

Whether sleeve-bearing or ball-bearing, Fairbanks-Morse Motors are built to standards that have gripped and held the confidence of thousands of veteran operating men—men who know motors.

Their capacity for sustained overloads is exceptional; outstanding mechanical stamina is at once apparent in sturdy frame construction and in broad, solid feet that *stay put*. In hundreds of applications, insulation is proving impervious to oil and water—even to caustic or acid fumes.

And these are merely telling examples of the uncompromising quality found in every detail of construction—quality that accounts for the ability of F-M motors to meet all conditions of drive, load or service.

Ask for special bulletins

FAIRBANKS, MORSE & CO., CHICAGO

28 branches throughout the United States at your service

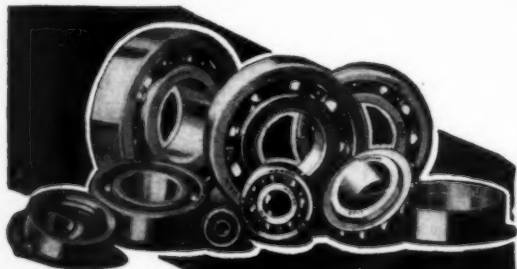
FAIRBANKS-MORSE

Pioneer Manufacturers of

ball bearing motors



AEA30.11



NORMA-HOFFMANN

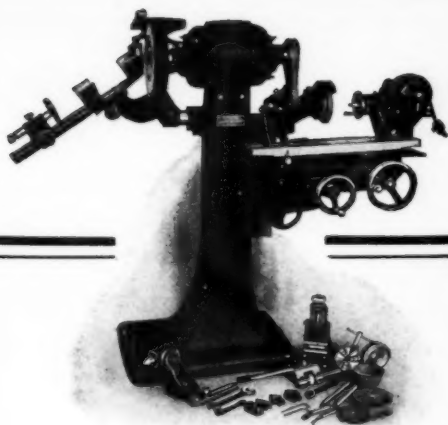
PRECISION Ball and Roller Bearings,
built to meet the exacting require-
ments of those with whom depend-
able bearing performance is the one
conclusive measure of bearing value.

Catalogs 904, 905, and 917

Norma-Hoffmann Bearings Corp'n.
Stamford, Conn., U. S. A.

PRECISION BEARINGS





Grand Rapids No. 2 Universal Cutter, Tool and Drill Grinder

With Self-Contained Motor Drive

No factor in the operation of machine tools is as important as that of having sharp cutters, drills and taps. Sharp tools will greatly reduce wear, power consumption and breakage, and improve production and quality.

The Grand Rapids No. 2 is *really* universal. Not only can you grind both drills and all kinds of cutters and reamers on it, but you can have one man grinding drills and another grinding cutters, reamers, etc., without either interfering in any way with the other!

Send for complete information—TODAY

Gallmeyer & Livingston Co.

342 Straight Ave., S. W., Grand Rapids, Mich.

Manufacturers of Grand Rapids Drill Grinders, Cutter and Tool Grinders and Tap Grinders. What do you need?

KEEN COMPETITION DEMANDS EFFICIENT MACHINE TOOLS

Replace the sledge hammer
for drive fit work.

It cannot compete with the
Lucas Power Forcing Press



The BELT
does the work
and SAVES the
workman's TIME
and ENERGY
for better use.

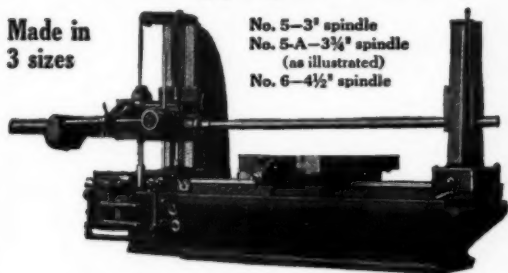
We also make the
LUCAS "PRECISION"
Horizontal Boring, Drilling
and Milling Machine

The Lucas Machine Tool Co.
521 East 99th Street, Cleveland, Ohio

Defiance No. 5-A Horizontal Boring, Milling, Drilling and Tapping Machine

Made in
3 sizes

No. 5—3" spindle
No. 5-A—3½" spindle
(as illustrated)
No. 6—4½" spindle



For More and Better Work

Defiance Machines are made to meet every requirement of machine tool users. They have an abundance of power and an ease of manipulation which insures speedy and accurate production in both single and manufacturing operations.

Speed, power and precision are obtained by simplified design and unusual accessibility which are but two of the many special features which add much to their dependability under continued hard usage and their ability to do more and better work.

Write for the descriptive folder, or for the complete Catalog of "The Defiance Line" of Cylinder Boring Machines, Heavy Service Drilling Machines, Rail Drills, Horizontal and Vertical Multiple Drilling Machines, Multiple Tapping Machines and Valve Grinding Machines.

The Defiance Machine Works
Defiance, Ohio

Designers and Builders of Precision-Production Machine Tools and
Special Woodworking Machinery

Simplicity

is the basis of CLEVELAND design and operation. All levers are reached from one position, saving time and steps, and CLEVELAND OPENSEIDE PLANERS contain fewer parts than any other openside planer, assuring greater rigidity, more accurate cutting, fewer shut-downs and longer life.

The Cleveland Planer Company

Established 1900

3148 Superior Ave.,

Cleveland, Ohio

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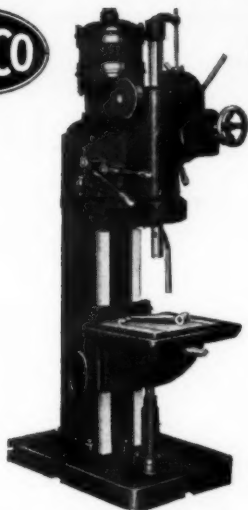
Over
1100

Installations

**26"
to
72"**



**The Open Side Planer with the Column
Base Cast Integral with its Closed Top Bed.**



No. 9 High Duty Single Spindle

A single spindle Hi Duty Drilling machine that is capable of meeting the requirements of modern machine shop practice. Has a capacity of a 1½ inch drill in steel. Furnished with belt or motor drive.

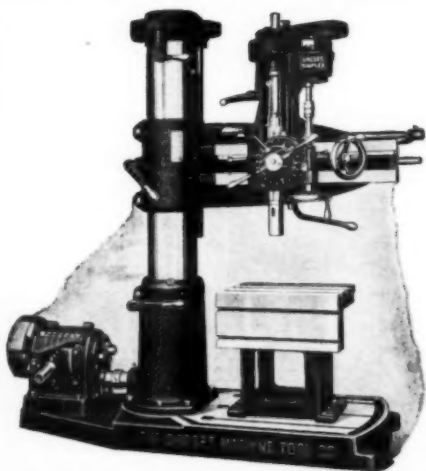
We are manufacturers of

Standard Adj. Multiple
Fixed Center Multiple
Single Purpose Auto.
Hi Duty Single Spindle
Horizontal Duplex

Drill Heads
Universal Joints
Quick Change Holders
Rotary Tables
Fixtures
Drillers—Tappers

The National Automatic Tool Co.
Richmond, Indiana

Solve Your Hole Problem



With a **DRESSES-SIMPLEX RADIAL**

We also build a complete line
of Multi Duty Ball Bearing
Radial Drills.

The Dresses Machine Tool Co.
CINCINNATI, OHIO



Threading at 3000 R. P. M.

These rods are being threaded with a No. 8-32 thread 5-16" long, at an average production of 1400 pieces per hour on our Standard High Speed Tapping Machine.



*How about your
threaded work?*

Leland-Gifford Company, - Worcester, Mass., U.S.A.

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BOSTON CHICAGO CLEVELAND

DETROIT NEW YORK

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Minneapolis

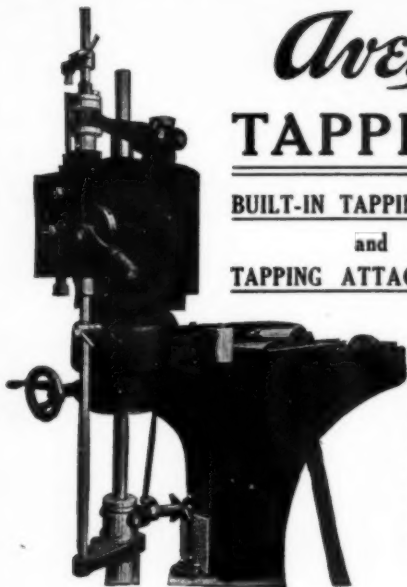
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LELAND - GIFFORD



Avey **TAPPERS**

BUILT-IN TAPPING UNITS

and

TAPPING ATTACHMENTS

Sizes
and Types
For All
Holes
Up To
1½ Inch
In Cast
Iron

AVEY Tappers reach the peak of tapping efficiency. Their speed, smooth positive operation, and capacity for continuous production of perfect tapped holes under severest conditions assure lowest possible cost for each hole tapped.

*Let us send you our Special Bulletins
describing our complete line of Tappers*

The Avey Drilling Machine Co.
CINCINNATI

FOOTBURT



A Single Spindle Footburt Sipp Sensitive Drill

**Made in three
sizes of single
and multiple
spindle models**

More holes with this machine

Why? Because you can change speeds in two seconds or belts in ten seconds—because the automatic idlers keep the belt pulling to capacity at all times—because the full ball bearing equipment and accurate machining gives a smooth, fast cut.

Write for No. 650 Folders

The Foote-Burt Company, Cleveland, O.

FOOTBURT

EDLUND

Sensitive Drills

are equipped by special methods of power transmission—vibration elimination—friction minimizing and unfailing accuracy to

Lower Costs

How? 3 speed changes can be made in a fraction of a second without stopping machine—a special belt shifter allows shifting the belt from either side—trips with such accuracy that any number of blind holes may be bored without .004" variation in depth—full ball bearing equipment and perfected construction give a smooth, clean cut.

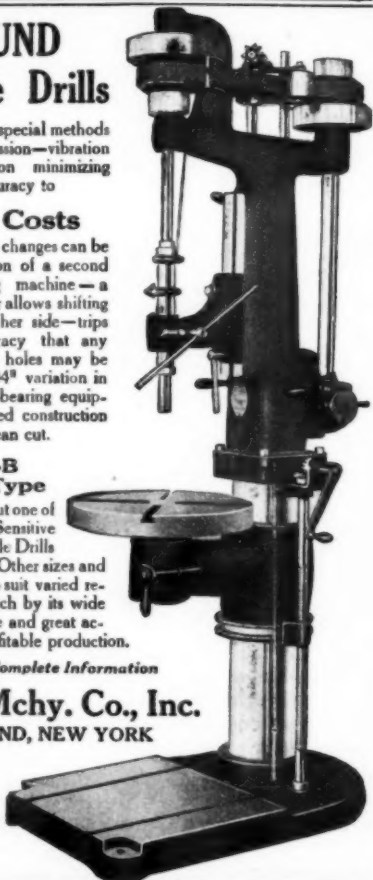
The 2-B Column Type

illustrated here is but one of the many types of Sensitive Single and Multiple Drills we manufacture. Other sizes and styles are made to suit varied requirements and each by its wide range, long service and great accuracy insures profitable production.

Write for Complete Information

Edlund Mchy. Co., Inc.
CORTLAND, NEW YORK

*Holes
by
Edlund
are low cost
holes*



GATERMAN

No. 10 Heavy Duty Pneumatic Oscillating Tapping Machine

Also recommended for Multiple Head Tapping

Increases production and lowers operating costs by tapping at higher speeds, automatically. Gives the accuracy and sensitivity of the work of a skilled mechanic at only a fraction of the cost.



Send samples or blue print. Our engineering department will be pleased to quote guaranteed production estimates and prices.

For lighter Tapping Equipment write for literature "LET AIR DO IT."

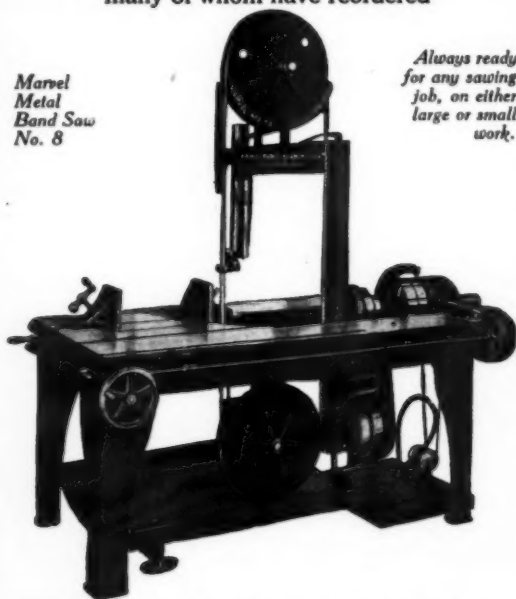
W. GATERMAN MFG. CO., Manitowoc, Wis., U.S.A.

The Marvel Metal Band Saw

Write for big list of satisfied users,
many of whom have reordered

*Marvel
Metal
Band Saw
No. 8*

*Always ready
for any sawing
job, on either
large or small
work.*



UNIVERSAL in its adaptation to every variety of metal sawing. It saws bars, beams, channels, tubes, etc., rapidly and accurately, and does the finest tool room work. Saws at an angle either way without swinging the bar around the shop. Has big capacity up to 18". The large bed gives lots of room for material and tools. A saw for every need.

Write for Circular or the Complete Catalog of MARVEL Saws

Armstrong-Blum Mfg. Co.
341 N. Francirco Ave., CHICAGO, ILL.

**Taylor & Fenn Belt Driven
No. 12 Spring Press**



**UNIFORM BLOW
SPRING PRESSES**

**Are made in
three sizes,
with either
single or
double action**

Our No. 12 Belt Driven Spring Press, illustrated above, has a stroke of $3\frac{1}{4}$ inches. The foot treadle operates a safety clutch attached to the flywheel, which automatically stops the machine after each stroke regardless of whether the treadle is released or held down by the operator. The clutch can be adjusted for a continuous stroke if desired.

Descriptive circular gladly sent upon request

The Taylor & Fenn Co.
Hartford, Conn., U. S. A.

KRW Hydraulic and Sensitive ARBOR PRESS

Now Sold Direct To User
At Greatly Reduced Prices

\$115⁰⁰ F. O. B.
Factory

COMPLETE With All
Attachments as shown

The latest improved combination KRW Hydraulic and sensitive Arbor Press incorporates many new improvements, not found in any other Arbor Press, at any price.

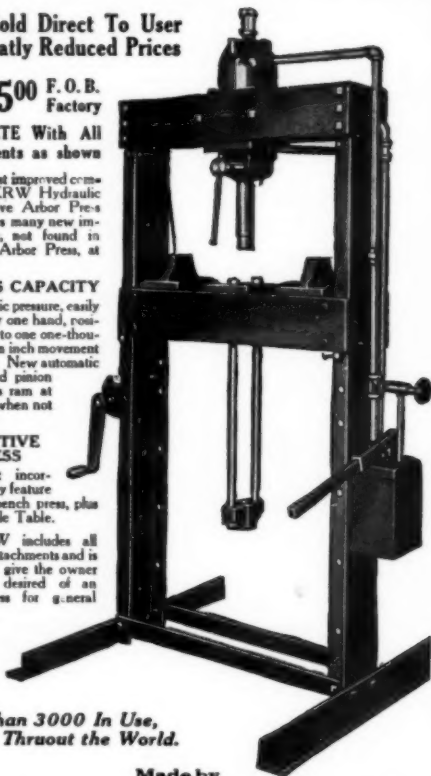
35 TONS CAPACITY

By hydraulic pressure, easily operated by one hand, sensitive control to one one-thousandth of an inch movement of the ram. New automatic air vent and pinion brake holds ram at any height when not in use.

SENSITIVE PRESS

Attachment incorporates every feature of a 3 ton bench press, plus—Adjustable Table.

The KRW includes all necessary attachments and is designed to give the owner everything desired of an Arbor Press for general garage use.



*More Than 3000 In Use,
Thruout the World.*

Made by

K. R. WILSON, 10-14 Lock St., BUFFALO, N. Y., U.S.A.

Save-Drill Chucks

Make Drills Last Longer

Save-Drill Chucks will hold either end of any broken drill long enough for your work. Broken drills you now discard may last longer than new ones. We have records of as high as 200,000 holes drilled from the broken end of a drill picked from the scrap pile.

The Breaking Point

of a drill is where it is gripped by the chuck. With Save-Drill Chucks, if you are drilling $\frac{1}{2}$ " deep, not more than $\frac{5}{8}$ " of the drill need protrude from the chuck—if the drill breaks you lose only this amount. Because of their compactness, both chuck and drill can be inserted into work heretofore accessible only to long and easily broken drills.

Made In All Sizes

Save-Drill Chucks are made in all sizes for use on Turret Lathes, Screw Machines and Milling Machines. They save time now lost in centering and setting up.

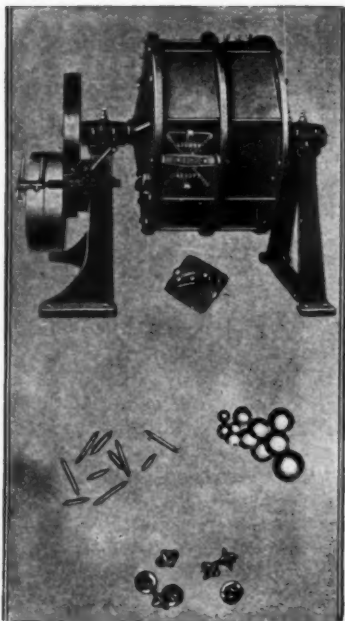
*Write Today for Full Information—And
Our 30-Day FREE TRIAL OFFER*

Sandusky Nut Company

112 Lawrence Street,

Sandusky, Ohio

Patent applied for



**Check
up on
Ball
Burnishing
!**

ITS present-day possibilities for finishing small metal articles will surprise you. Many Abbott Barrels are finishing in an ordinary working day as many parts as 8 hand finishers formerly produced. Imagine the difference in cost! Abbott Burnishing Balls, with Abbott Cones to reach sharp angles, combine to produce the half rolling, half-rubbing action necessary for fine burnishing results. *Send us samples of your work for analysis and recommendations.*

The Abbott Ball Company

"Originators of Commercial Ball Bearings"

1043 New Britain Ave.,

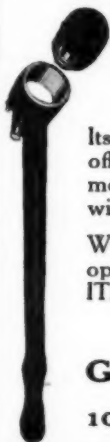
Hartford, Conn.



**Avoid
Skinned Knuckles
and
Wasted
Time**

caused by the old fashioned open end wrench.

Time wasting motions avoided with the



FAVORITE Reversible Ratchet WRENCH

Its socket form of head cannot slip off the nut, and its quick ratchet movement turns the nut rapidly without the usual lost motion.

Why plug away with the old fashioned open end wrench when the FAVORITE wrench means real economy.

Built Strong to Stand Rough Usage

Greene, Tweed & Co.

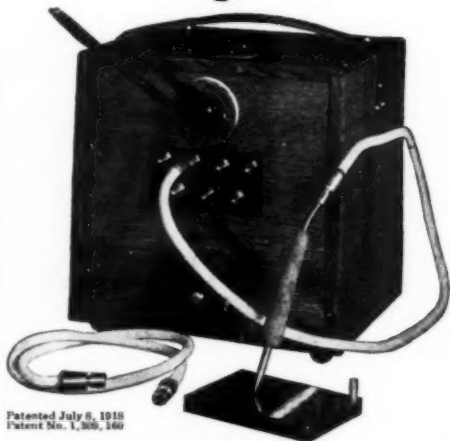
Sole Manufacturers

109 Duane St.,

New York

Etchograph

Trade Mark



Patented July 8, 1918
Patent No. 1,309,160

Cut Tool Marking Time 80%

For marking iron, steel or steelite, nothing can equal the ETCHOGRAPH—the original electric marker. Six stages of heat allow six variations in the size of marking, an advantage no other machine can offer. No acids—no fuss—simple to operate—just connect to light socket and write as with a pencil.

Write for descriptive folder, stating power available.

William Brewster Company
50 Church St., New York

Cut Your Drilling Costs in Half with STICK-TO

STICK-TO Chucks are especially designed to prevent the breakage of drills and to use up any kind of broken drills. Grips the twist of the drill without marring or dulling its cutting edge, as well as the round shank.

This New Chuck Grips the Drill at 8 Points

Which prevents slippage and gives excellent alignment. Highly recommended for use with the quick change collet system, multiple spindle work—both tapping and drilling, as the diameter of the chuck is so small it will work in very close centers. The smallest possible projection of the twist drill outside the chuck may be regulated to the depth of the hole, consequently it is quite plain that vibration is reduced to a minimum and the risk of breakage practically eliminated. No parts, such as jaws, cones or gears to break or wear, thereby assuring an exceedingly long life. Each chuck has a capacity to take five sizes of drills, by sixty-fourths.

STICK-TO Double Twist Drills

are really two drills in one! When one end becomes dull much time can be saved by simply inverting it. The full length of the drill can be consumed satisfactorily as there is no useless shank to be discarded. Made of the best Swedish Tool Steel.

Write for Complete Information

**Specialty
Trading Corp'n**

551 Fifth Ave.,
NEW YORK, N. Y.

TICK-TO
PATENT

CHUCKS
& DOUBLE
TWIST
DRILLS





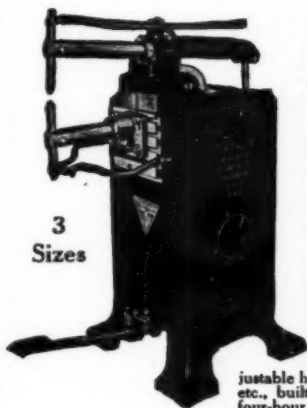
They are usually known among mechanics as lathe mandrels, but they work equally as well on millers or grinders. They also will take a job with a square hole as well as a round one.

Write us for further information.

W. H. Nicholson & Co., 117 Oregon St., Wilkes-Barre, Pa.



Increase Production, Decrease Costs!



**3
Sizes**

Accuracy — precision — dependability — these are the factors that determine the selection of spot welders in the automotive industry. But they are not the only reasons why so many automotive concerns inevitably come to Taylor-Winfield — increased production and reduced operating costs are other decided advantages of Taylor-Winfield Spot Welders.

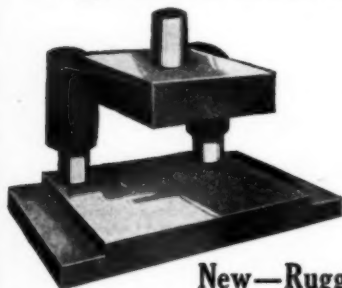
The latest type illustrated, Type N, is already the leading continuous service spot-welding machine of the industry, with water-cooled transformer, automatic switch, adjustable horns, 8-step regulator, etc., built for steady twenty-four-hour duty!

Write for details on complete Taylor-Winfield line

**THE TAYLOR-WINFIELD CORP.
WARREN, OHIO**

TAYLOR-WINFIELD
**Spot, Butt,
Seam or Portable WELDERS**

Insure Your Dies Against Breakage—



Use the
U. S. Tool
STEEL
BASE
Sub-
Press

New—Rugged—Strong !

STEEL BASE—Larger in area than usual, giving greater strength when the blank hole is cut, greater resistance to strains and buckling. Thinner, lighter in weight, yet immensely stronger than cast-iron base presses.

ABSOLUTE INTERCHANGEABILITY—Any top fits any base, a positive assurance of precision.

HUSKY—Big pillars; extra long bushings hardened and ground.

EXTREMELY SIMPLE—Only three types meet every requirement for a sub-press.

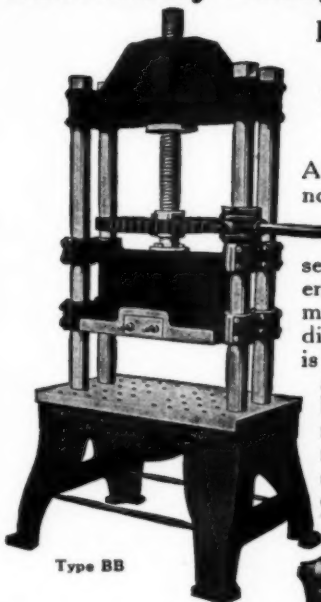
POSITIVE LUBRICATION—A simple and ingenious arrangement provides positive lubrication for pillars.

COST—No more than ordinary cast base sub-presses.

Send for Complete List of Styles and Prices

U. S. Tool Company, Inc.
AMPERE, N. J.

Save Many Costly Hours—



Type BB

In Fitting Dies With Our 1-Man 4-Post Screw Press

A toolmaker requires no help in handling any dies. Machine is sensitive, rigid, powerful. Perfect alignment of punch and die is assured. Table is 20"x36", and there's abundant room between bed and ram. Press is also made in three smaller sizes. All up-to-date cost reducers.

Surface Grinder

Is accurate, runs silently without chatter. Both feeds have graduated dial. Has all latest adjustments and attachments.

Details and price on request

**JARECKI MACHINE
AND TOOL CO.**

Dept. A. GRAND RAPIDS, MICH.





GRINDER PUMP



VOLUME PUMPS



MOTOR DRIVEN UNITS
1/2 to 5 H. P. 5 to 75 G. P. M.

FULFLO delivers coolant in volumes which promotes efficiency in cutting tools.

The full, copious flow from the Fulflo is needed to make the best tool, with the best coolant, most effective.

FULFLO does not clog, therefore it always

works. It's the trouble proof pump.

No machines stopped to unclog pump. All the chips you can get into it pass through without harm.

FULFLO has longest life because its only pumping part does not wear.

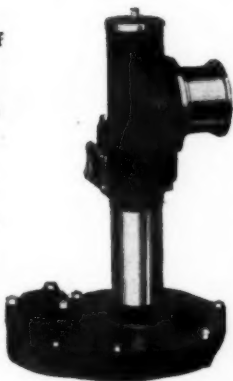
MANUFACTURED BY

FULFLO SPECIALTIES CO., **BLANCHESTER, OHIO**

THE "GUSHER" The last word in Machine Tool Lubricant Pumps

Range of
sizes to
deliver
12 to 75
gallons
per
minute.

Belt or
Motor
Drive.



This
model
delivers
53 gals.
per
minute,
at a
4-foot
head
at
400 R. P. M.

New Model B-L "Gusher" Reversible Belt Driven Pump

In all things, but proverbially in mechanism, the supreme test of excellence is simplicity.

The "Gushers" are the simplest pumps made. They are free from all troublesome complications—no gears—no foot or relief valves—no packing nuts—no priming necessary—and grit, dirt and small chips pass through without injury to the mechanism. Easily installed, wonderfully efficient, and stand wear and tear.

Write today for complete Catalog of the "Gusher Line"

The Ruthman Machinery Co.

528-534 E. Front St., Cincinnati, Ohio

The "BB" Upright Drill

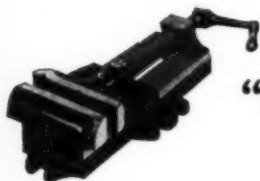
WE have taken over the stock of 20th Upright Drills of a manufacturer of good standing who will continue to make this product for us under the name of the "BB" Drill.

These 20th Drills have power feed and back gears, are very powerful, accurately made and well finished. An opportunity to get an excellent Drill at a very low price.



Priced
at Only **\$133.**

Arranged for
Motor Drive **\$144.**



The "BB" Machine Vise

For Use on Miller, Shaper, Planer or Drill

The top, bottom and sides are accurately machined after assembly. Well made throughout of good material. Will stand up under hard use.

No well equipped shop is complete without this modern vise. Opens 6 inches, weights 37 pounds.

Price Only \$18.00

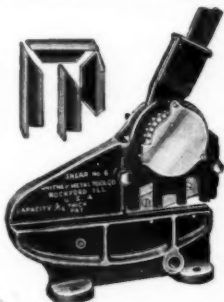
A. R. Marsh Machinery Company
4900 West 73rd St., Cleveland, Ohio

NEW

No. 6 Slitting Shear Roller Bearing

Made from
Drop
Forgings
Hardened

All Parts
Inter-
changeable



Capacity —

Throatless— Will
cut all thicknesses
up to and includ-
ing 3/16 inch,
will slit sheets,
mitre angle iron
and cut off flats.

To maintain our reputation we must

Remove Friction

That is why all our machines are either

Ball or Roller Bearing

This is the most powerful Slitting Shear made because of
the fact that it is *Roller Bearing*. Reducing friction not
only increases power, but greatly reduces wear



Write for Catalog on Entire Line

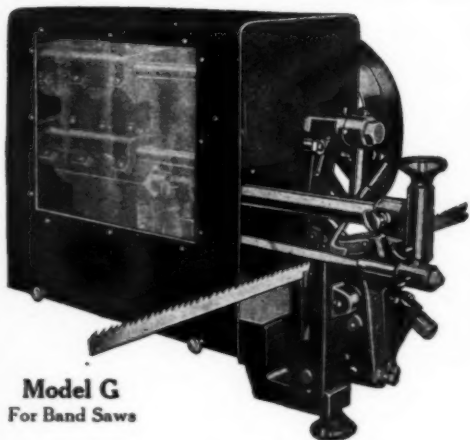
WHITNEY METAL TOOL CO.

95 Forbes St., Rockford, Ill

New Super

Double Acting

FILER and SETTER



Model G
For Band Saws

Each tooth is filed in the direction toward which it is set.

Two teeth are set in opposite directions at the same time.

The amount of set given the saw is controlled by one adjustment.

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THE WARDWELL MFG. CO.

Specialty Manufacturers of the largest line of Saw Filers made in the U. S. A.
116 Hamilton Ave., Cleveland, Ohio

Use **DANLY**
DANLY Die Sets

DANLY Die Sets

*and die makers'
supplies*

Carried in stock, at all Danly warehouses, 15 types and 188 sizes of Danly die sets . . . completely assembled, ready for immediate use.

You can order from the Danly Catalogue, as easily as writing out a requisition on your own stock room.

Also carried in stock, dowel pins, leader pins and bushings, pry bars, clamps, cap and set screws, pressure pad, knockout and stripper plate springs; lugs; stripper bolts . . . complete line of die makers' accessories.

*Send for your copy of the
new catalogue, just off the
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and indispensable.
No obligation.*

Danly Machine Specialties, Inc.

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New Type Machine For Rotary Filing Grinding and Polishing

Type RF-M 4. $\frac{1}{4}$ H. P.



For
Die Makers
And
All Kinds of
Metal Finishing
Of
Various Shapes
and Sizes
A Machine—
For
Many Purposes

Attach to the
Lighting Circuit

Attachments



EQUIPMENT

Ball Bearing Hand Piece.
8 Assorted Rotary Files.
9 Assorted Grinding Wheels.
1 Rubber Polishing Drum.

Machine Complete as Illustrated

N. A. STRAND & CO.

Manufacturers

5001 No. Lincoln Street
CHICAGO



Reduce Your Costs Of Light Shaping and Slotting

7 in.
Shaper
Stroke



3½ in.
Slotter
Stroke

The Rhodes Shaper and Slotter

Probably the greater part of your shaping and slotting falls within the dimensions of this specialized machine. If you are now putting such work through heavy, high-cost machines, then the "Rhodes" will save you money.

In the construction of the "Rhodes" we have spared no pains to make it the equal of any of the larger, higher-cost machines in materials used, workmanship and performance. It will pay you to investigate the "Rhodes" and learn how economically it will serve you.

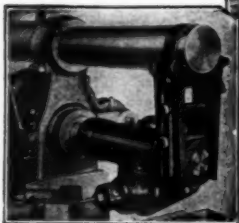
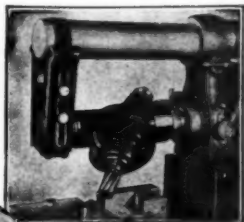
Ask your dealer or write for
CATALOG H22

The Rhodes Mfg. Company
944 Park Road, -:- Hartford, Conn.

SHAPERS—RHODES—SLOTTERS

AT ANY ANGLE IN ANY PLANE

Porter-Cable Milling Attachments



**Reduce
Costly
Set-Ups
On Your
Work**

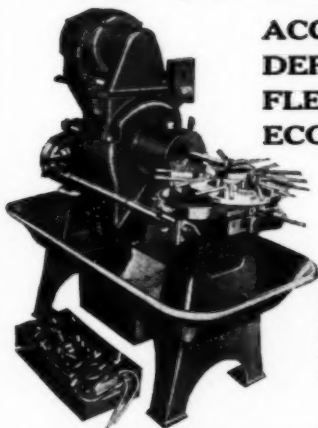
As it is easier to move the cutter than the work, they will save you money and speed up production.

*Send for our free Milling Attachment Booklet.
Just out. It might solve your problem.*

Porter - Cable Machine Co.
Salina St., **Syracuse, N. Y.**

Rickert- Shafer Automatic

Single Purpose Threading Machine



**ACCURATE
DEPENDABLE
FLEXIBLE
ECONOMICAL**

These are a few of the reasons for giving R-S Threading Machines particular consideration.

The R-S Machine is practically the only automatic threader which will maintain the accuracy demanded by automobile manufacturers. Roller bearings are used for the spindle sleeve; bronze for other vital bearings; individual motor drive, built-in pump for circulating coolant and generous sized reservoir for holding same.

It can be adapted to almost every job of threading—from the simplest to the most complicated. Combination tools supplied so that chamfering, reaming, facing, etc., can be done simultaneously with the threading and with one chucking.

This R-S is backed by a company whose personnel comprises men who have specialized on thread cutting only for the past 35 years. They KNOW HOW to produce threading equipment which will give you REAL SERVICE.

Write us for complete information

RICKERT-SHAFFER CO., Erie, Penna.

PEERLESS SURFACING MACHINES

for
**Grinding and Finishing
Flat Work**

**4' Bench
Model**



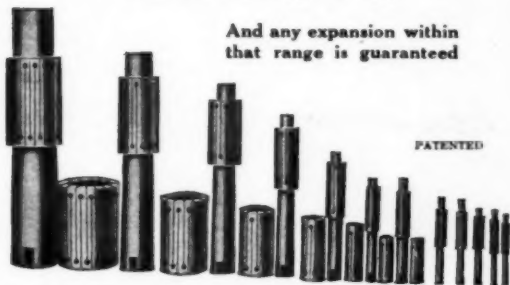
**Larger Machines in Both
Horizontal and Vertical Styles**

SEND FOR FOLDER

**PEERLESS SURFACING MACHINE CO., Inc.
TROY, N. Y.**

JUST 1 SET OF 12 Champion Expanding Mandrels

Will fill by thousandths any inside
diameter from $\frac{1}{2}$ " to $6\frac{1}{2}$ "



And any expansion within
that range is guaranteed

So Simple—only two parts.

So Handy—always ready for any job.

So Efficient—dependable for precision accuracy.

They are suitable for all classes of work, large or small, in all kinds of metal. They hold work of any length of bore and do not chatter. They are lighter, more easily handled, and keep truer than common mandrels. They release work easily. And the grinding of all parts after hardening insures the greatest accuracy. The cost is only about one-fifth that of solid arbors of equal range graduated by sixteenths.

Our Catalog also describes

Champion Tool Holders, Champion Emery Wheel Dressers, Machinists' Vises and Clamps, etc., and our large line of practical, hard-to-beat Shop Furniture. Copy upon request.

The Western Tool & Mfg. Co.
SPRINGFIELD, OHIO

Genesee Hollow Mills Are Self-Salvaging



Genesee Hollow Mills have the accuracy and range of usefulness at low cost that make for true tool economy.

Seven sizes cover the entire field from $\frac{1}{8}$ " to 2", and machine all sizes in these limits with unsurpassed accuracy and speed—cutting up to 15" inches a minute in steel.

No matter to what usage you subject "Genesees," they never clog or change in size. Their blades can be ground to any angle, and as they are replaceable, they are self-salvaging and will outlast from 7 to 10 solid tools.

As cost reducers Genesee Hollow Ground Mills have been a revelation to manufacturers everywhere.

Let us give you detailed information

Genesee Manufacturing Co., Inc.

141 North Water Street, Rochester, N. Y.

Manufacturers of Genesee Rapid Production Tools.

Est. 1908

Working For Production?

**Consider Catlin Keyseaters
For Speeding Up Your Work**



In ordinary shop practice, without any effort at record making, our machine has cut a keyseat 10" long, 1½" wide and 7/16" deep, in three minutes, through a cast iron hub. In the hub of a cast steel wheel, it has cut a keyseat 6" long, 1" wide and 7/16" deep, in three minutes.

Faster Work

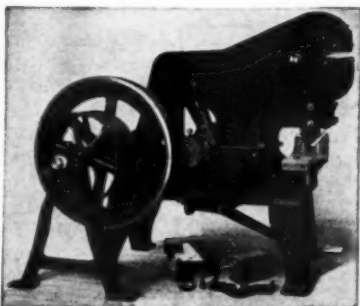
On some classes of work, it is possible to keyseat piece after piece without clamping down the work or stopping the machine.

*We will be glad to mail you our Catalog
and send you detailed information.*

Chattanooga Machinery Company

2401 Bennett Ave., Chattanooga, Tenn.

Punches—Shears—Bending Rolls
The Beloit
Combined Power Punch and Shear



Built in seven sizes. Nos. 51, 52, 53, 54, 55, 55½ and 56
Direct connected motor or belt drive

This is the best all around punch and shear in a combined machine of moderate cost. It is heavy and substantial, and amply back geared to require the minimum amount of power; is strong, compact, and easy to operate. Can be equipped with angle shearing attachment, architectural jaw, or for special work.

We make a complete line of punching and shearing machinery in both power and hand tools, also light and heavy duty bending rolls.

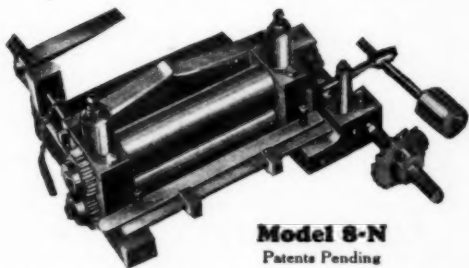
We do not overrate the capacity of our machines.

Write for catalog and prices.

Hendley & Whittemore Co.
100 S. State St., Beloit, Wis.

Automatic Reversible ROLL FEED

For Any Punch Press



Model S-N

Patents Pending

A universal, flexible feed, for automatically feeding Metal, Paper, Leather, Brake Lining, or any stock from coils—from wire to 8" widths and lengths of 0" to 36" at each stroke of the press at rated catalog speed or faster.

This feed mounts on either right or left side of the Bolster Plate, either as a Push or Pull feed. May also be mounted in tandem, one on the right and one on the left as a Push-Pull feed for paper or light stock.

The drive is by chain from a sprocket on the crank shaft, using any sprocket ratio desired.

PRICE \$195.00 F. O. B. Chicago

Wittek Manufacturing Co.

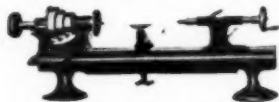
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2532 So. Kedzie Ave.,

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SUPREME SERVICE



The Cataract Line

of Lathes embodies the highest standards of Quality and Workmanship. Catalog on request.

Hardinge Brothers Inc.

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Universal Joints

In Steel and Bronze



Send for Special Circular giving specifications and prices on complete line

STANDARDIZED BOSTON GEARS

BOSTON GEAR WORKS SALES CO.

Norfolk Downs, Mass.

BOSTON NEW YORK PHILADELPHIA CLEVELAND CHICAGO

"Lehmann Lathes"



TWO STYLES

Three Step Cone and Geared Head

5 SIZES

16/18, 18/20, 20/22, 22/24, 24/27¹/₂

Accurate—Powerful Tools Embodying

**the most modern ideas in design and construction
Their performance is their best endorsement**

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LEHMANN MACHINE CO.,

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HAMILTON



LATHES

Are Strong and Accurate

**Modern Heavy Duty Lathes 14-16-18-20 and 24¹/₂
Single and double back geared, cone driven.**

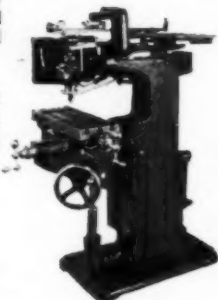
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The Hamilton Tool Co., Hamilton, Ohio

Universal Die Sinking and Engraving Machines

designed to save time and money
on the production of light and
heavy dies, molds, stamps and
general engraved work—

in brass, steel or cast iron. Built
by a firm having over thirty years
of experience, having equipped
many prominent work-shops.



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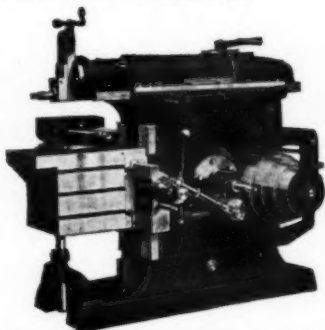
George Gorton Machine Co.
Racine, Wisconsin

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12", 14", 16"
Plain Crank.
16", 20", 25"
B. G. Crank,
either Cone
Driven or
through Speed
Box.

Belt Shifter
Regular Equip-
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32" Back Gear-
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gle Pulley
Drive.



The Smith & Mills Co., Cincinnati, O., U.S.A.

12 Spindle Speeds—

And other features for modern needs.



C. & J.

15/16-inch Geared Head
Motor Driven Lathe

Ask for further details

Carroll & Jamieson Machine Tool Co.
Batavia, Ohio

The DRUMMOND BENCH LATHE



7" Swing
9" in Gap
1' 4" or 2' 4"
between centers

PRICE
\$185.00 or
\$205.00

This well tried lathe is more than a "turning machine", for it enables you to mill, drill, face, saw, bore and do dozens of operations besides all ordinary turning and screw cutting. Strong, rigid and heavy cutting yet working to fine limits with certainty.

See all details in Catalog 8

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120 Liberty Street New York, N. Y.



ALL TYPES:
Spurs, Internals, Bevels,
Mitres, Helicals, Spirals,
Worms, Worm Gears,
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ANY MATERIAL:
Steel, Cast Iron,
Brass, Bronze,
Aluminum, Fibre,
Bakelite, Rawhide.

Made in Small and Medium Sizes, all of One Quality—the very best. We also carry a full line of Stock Gears for immediate delivery. *Write us.*

MASSACHUSETTS GEAR & TOOL CO.
36 Nashua St., Woburn, Mass.

Speed Reducers

For every possible requirement for stepping down motor speeds, there's an IXL reducer that exactly fits your needs.

Spur—Worm—Herringbone

Reductions from 2 to 1 up to 50,000 to 1.

Send for 660 page catalog
"Gear Problems."



IXL Spur Reducer

FOOTE BROS.
IXL GEAR & MACHINE CO. IXL
229 N. Curtis St., Chicago



Die Making Machines

save an average of 50%

Dies, templates, experimental parts, gages and the like can be sawed, filed and lapped on the Oliver of Adrian Die Making Machine much easier, more accurately and in a fraction of the time ordinarily required for handwork.

We also manufacture a line of

Point Thinners.

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Profilers.

Cutter Grinders



Send

for

Bulletins

Oliver Instrument Company, 1408 Maumee St.,
ADRIAN, MICH.

GEARS

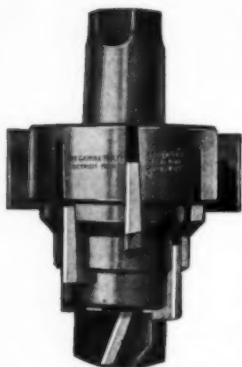
All Kinds—Small



The most accurate made and prices reasonable. We carry a complete line of gears in stock for immediate shipment. Can also quote on special gears of all kinds. Send us your inquiries.

Write for Catalogue No. 70

CHICAGO STOCK GEAR WORKS
105 South Jefferson Street, Chicago, Ill.



GAIRING

MULTIPLE - OPERATION
CUTTERS

SOLID
AND

INSERTED BLADE

Our business is the planning and production of end cutting tools upon which we have concentrated our thoughts and efforts for many years.

Our Technical dept. devotes its time exclusively to planning and designing tools to suit your requirements.

Send us your Blue Prints or parts to be machined, we will design and suggest tools to produce holes most economically.

No obligation, merely a willingness to be helpful. Tool Catalog and Engineering Reference mailed on request.

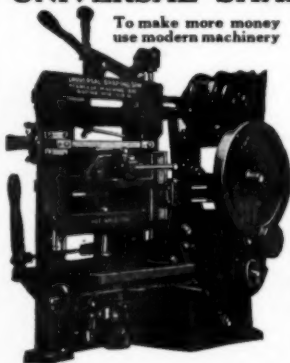
THE GAIRING TOOL COMPANY

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Representatives In Principal Cities

-PEERLESS- UNIVERSAL SHAPING SAW



To make more money
use modern machinery

Different Principles
Greater Efficiency

Give The Most Of-

Speed
Accuracy
Blade Economy

SIZES:

6"x6"--9"x9"--13"x13"

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HIGH SPEED HACK-SAWS

6"x6" 9"x9" 13"x16"

Sturdy--Efficient--Reliable

Peerless Machine Co.

1218 Sixteenth St.

Racine, Wisconsin

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Announcing!



A New Size *Etico* Tapper

No. 3—Capacity 0 to $\frac{5}{8}$ "

Anything that can be tapped by hand can be tapped with an Etico tapper. The Etico taps blind holes as easily as those which go through—and it eliminates broken taps.

There is no friction to adjust in the Etico.

Production increased 100% to 500% on many jobs.

Don't condemn the taps you are using; try an Etico tapper for ten days without obligation.

'Sensitive as your Finger Tips.'

No. 1 Etico Tapper—capacity $\frac{1}{4}$ inch.
No. 2 Etico Tapper—capacity $\frac{3}{8}$ inch.
No. 3 Etico Tapper—capacity $\frac{5}{8}$ inch.

Eastern Tube & Tool Co., Inc., 600 Johnson Ave., BROOKLYN, N. Y.

UTILITY-WIARD Quick Change CHUCKS

(Improved)

For The

Rapid Changing of
Tools While The
Spindle Is
Turning



**Quick
Accurate
Powerful
Dependable**

The J. C. Glenzer Co.

6467 Epworth Blvd.,

DETROIT, MICH.



VICTORY Polisher

Timken Bearings

\$75

**For Single Tight
Pulley Machine**

**\$95.00 For Tight and Loose
Pulley Machine**

America's Greatest Value

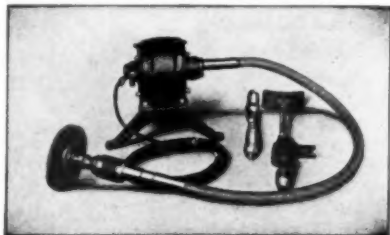
Spindle $1\frac{1}{4}$ " between
flanges and 50" overall

HILL-CURTIS Co.
POLISHING AND GRINDING MACHINERY
FORMERLY MADE BY WEBSTER & PERCE TOOL CO. DANVERS, VT.
KALAMAZOO MICHIGAN

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No. Pitcher
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The Whirlwind Buffer and Grinder

Will cut the cost on any unhandy
grinding or polishing job



Send for our latest bulletin

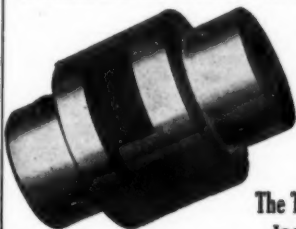
Stow Flexible Shaft Co., 3454 Ludlow St.,
Philadelphia, Pa.

The Best Since 1876

Perfect Power Transmission!

HIGGINS *Flexible* COUPLING

SPECIFY the HIGGINS Flexible COUPLING for perfect alignment of shafts, each member running independently of its own bearings. HIGGINS Flexible COUPLINGS allow sufficient freedom to one or both shafts so that they may move or oscillate end-wise. Of simple but sturdy construction, they



stand up under the heaviest overload strain. Made in all standard shaft sizes. Special sizes made to your order.

*Write for complete
descriptive folder*

The Tomkins-Johnson Co.
Jackson, Michigan

Why Not?



Why not save nine-tenths of your cutting time? Costs nothing to find out.

Write for Catalog No. H21 and prices

The W. W. Oliver Mfg. Co.
1495 Niagara St., Buffalo, N. Y.

Twentieth Century Balancing Tool

Always on the level



The most practical, sensitive and inexpensive device manufactured for balancing pulleys, cones, armatures, fly wheels, polishing wheels, etc.

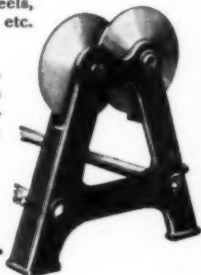
Will set anywhere and is easily portable. In sizes

up to 24,000 pounds capacity.

Ask for the Bulletin

Sundstrand Machine Tool Co.

Rockford, Ill.



For Servicing Machines or Storage

"The Handiest Racks"



FOR SERVICING—They keep material beside lathe or screw machine, ready for instant use. Being neatly piled and sorted, operator loses no time in selecting stock. Saves time, steps, and space.

FOR STORAGE—Keeps pipe, shafting and bar stock neatly piled and assorted in smallest space, making it easy to handle and count. May be set against wall for a *single-arm* rack or out on floor as *double-arm* rack.

Re-Orders Prove Usefulness

One manufacturer recently ordered as follows: May 4, (3); May 17, (3); August 9, (4) and Sept. 12, (8). Another ordered his first three in August and 8 more in September. And so on.

Shipped on Trial if You Wish

Wm. S. Yohe Supply Co.

503 Mahoning Road, N. E.,

Canton, Ohio

T.H.L. Front Lever Bench Punch

Malleable iron body; working parts hardened. Steel shaft and plunger. Die cannot lose alignment with punch. All parts interchangeable. Built for hardest, toughest work.

PRICE \$45

Extra Punches, 20 cents each; extra dies, 30 cents.

Capacity $13/32$ " thru $1/4$ " steel, $11/32$ " thru $5/16$ ". Punches up to $1/2$ ". Weight, 70 lbs.

A good buy; can ship promptly

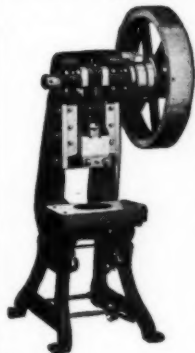
**T. H. LEWTHWAITE
MACHINE CO.**

(Est. 1890)

311 E. 47th St., NEW YORK



The Spirit Of the Times



is reflected in the speed and stamina of Rockford High Duty Punch Presses.

They are built to produce and maintain Hi-Production—and they do it.

Wide range of sizes and types.

Write today for new catalog

Rockford Iron Works
Rockford, Ill.

**Equip with
BRIDGEBILT
Factory Seating**

Adjustable for comfort—steel for long life

Select the chairs and stools for your factory from this line. They will meet your particular needs and stand up under any wear you give them.

Write for prices and illustrated folder



The Chicago Wire Chair Co.

616 No. LaSalle St., Chicago, Ill.



Bar Stock Racks

Steel Column, Adjustable Arms Can Not Tip Over.

CAPACITY:—All the steel that you can pile on.

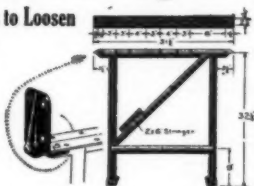
Bench Legs

Steel-Welded—No Rivets to Loosen

Cuts costs in Building and Maintenance of Benches.

**Durable—Rigid—
Non-Breakable**

Pollard Bros. Mfg. Co.
4038 N. Tripp Ave.
CHICAGO, ILL.



Reliability and Adaptability



Are Assured if You Use

SMILLIE

Turret Lathe Drill Chucks

The American Injector Co. says: "The valuable features of these chucks are the ease with which the work can be cen-

tered; the rigid holding of tools and drills when locked in position; their reliability and ability to stand severe usage."

Dimensions and Prices:

No. 1 takes Drills No. 55 to $\frac{3}{8}$ "	\$ 7.00
No. 2 takes Drills No. 42 to $\frac{1}{2}$ "	8.50
No. 3 takes Drills No. $\frac{1}{4}$ " to $\frac{3}{4}$ "	9.50
No. 4 takes Drills No. $\frac{1}{2}$ " to 1"	17.00

Shipped for FREE TRIAL if so desired

C. M. SMILLIE & CO.

520 E. Larned St.,

DETROIT, MICH.

E-Z THREAD DIAL

Thread cutting on engine lathes made easy, and at lower cost. Made in four sizes. Can be easily attached to all size lathes. A reliable device that will aid the operator in the work of cutting threads. With it threads can be cut close up to shoulders as easily as the ordinary thread.



Eliminates stopping or reversing the lathe.

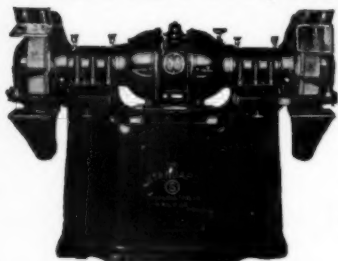
The many repeat orders received prove it is satisfactory after trial.

Can be shipped within two days after receipt of order.

Sent on thirty days' trial. Send for latest folder today.

JAMES M. COLVEN, 20 Wolfe Street, Yonkers, N. Y.

STANDARD Heavy Duty GRINDER



3 Sizes:
5—7½ and 10
H. P.

Four
Ball Bearings

G. E. 40 degree motors and Push Button Control.
S. K. F. Ball Bearings.

Write for complete catalog on Tools

THE STANDARD ELECTRICAL TOOL CO.
Established 1912. Cincinnati, Ohio

Flexible Shaft Machines Over 100 Types and Sizes



Grinding Castings

Mall
TRADE MARK

The word Mall in the flexible shaft field means unexcelled design, workmanship, and material built into a machine for maximum life and serviceability.

Mall Red Rubber flexible shafts and tools have proven themselves superior in actual operation in every field employing flexible shaft machinery.

*Ask your jobber or write us
for catalog.*

Mall Tool Company, 7730 So. Chicago Ave.,
CHICAGO, ILL.

Makers of the Largest Assortment of Flexible Shaft Machines and Attachments

GREENE QUICKACTING VISE



(PATENT PENDING)

Announcing The New 6 Inch Size

A fitting companion for our 4 inch vise. Opens 6 inches, jaws 6 inches wide, weight 30 pounds. Husky and quick. Immediate deliveries on both sizes.

Prices: 4 Inch \$10 6 Inch \$20

Get Our Introductory Offer

Central Distributing Co.

946 Harper Ave.,

Detroit, Mich.

Mail Orders Solicited-Agents Wanted

Use the Blue Book to Reach The Big Manufacturers

in all lines of business, in every state in the Union, who use machine tools in their plants.

It goes to more of them than any other publication on earth, because we mail it to them.

Our method is simple, as most good things are, and as effective as it is simple.

Write for rates and full particulars

Hitchcock Publishing Co.
508 S. Dearborn St., Chicago, Ill.

**THOMPSON
12"x36"
Universal**



**Saves
Time
and
Money**

**ALL Grinding on
ONE Machine—**

Thoroughly efficient, accurate and dependable. Work adjusts to a fixed grinding wheel — an exclusive feature that's better.

Does all kinds of grinding like a single purpose machine.

Machines are equipped with the new auxiliary coarse cross feed for surface grinding.

**The Thompson
Grinder Co.**
1534 West Main St.,
Springfield, Ohio



Hartford Taper Gage

Locates Inaccuracies Instantly

When turning tapers on end mills, profile cutters, twist drills, reamers, lathes, etc., accuracy is all important. The Hartford Taper Gage enables the workman to tell instantly whether a taper is right.

Simple—Inexpensive—Reliable

Any inaccuracy down to .001" can be instantly detected. Adjustable over a wide range—from No. 0 to No. 14 taper.

Write for Complete Details and Price

**We Also Build Machinery on a Contract Basis
And Design and Develop Special
Automatic Machinery**

Gears Cut To Order

Hartford Special Machinery Co.
285 Homestead Ave., Hartford, Conn.



Racine Shear Cut Production Saw—Positive screw feeds, cutting time never varies. Blade life is trebled.

Production Metal Cutting

The New Racine Shear Cut Production Saw offers new economies in metal cutting—A real production tool that doubles the capacity of your metal cutting department.

Under positive screw feed each saw tooth takes a full cut without over loading—cutting speed is increased two or three times over common practice. New metal cutting *Chart* on request. Write

Racine Tool & Machine Co.
1429 Junction Ave., Racine, Wis.

RACINE

HIGH-SPEED

METAL CUTTING MACHINES

The Copperhead Lap Set

contains 7 Laps in following sizes:

$\frac{1}{8}$, $\frac{3}{16}$, $\frac{1}{4}$, $\frac{5}{16}$, $\frac{3}{8}$, $\frac{7}{16}$, $\frac{1}{2}$.



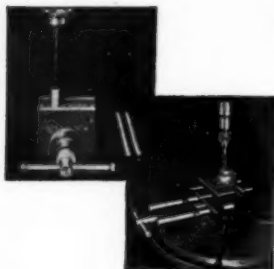
The body of a *Copperhead Lap* is made of steel and permanent, the sleeve is made of copper and renewable when worn out. Copperhead Laps are cost reducers; cut freely, and produce a clean and true hole. They have new and patented features.

Ask for details and prices

**GROETCHEN TOOL
& MFG. CO.**

721 Fulton St., Chicago, Ill.

Builders and designers of plain and intricate Dies and Special Machinery



WHERE else
can you buy an 8"
Drill Press Vise
for
\$25.00.

The 4" size is only \$15.00—

*Write us Direct if your supply house does
 not have one in stock. Bulletins on request.*

DEMCO Inc., 105-115 S. Calvert St., Baltimore, Md.



Atlas Arbor Presses

For All Forcing Operations

Illustration shows our
 No. 55 Power Drive
 Press, which is adapta-
 ble for fast production
 work and capable of
 supplying ten tons pres-
 sure.

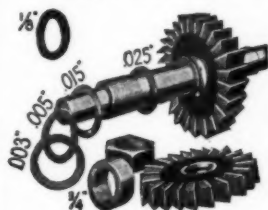
*Write for our Bulletin—
 showing 30 different sizes*

Atlas Press Co.

*Department B,
 Kalamazoo, Michigan*

Steel Spacing Washers—

Made of a good grade of Cold Rolled Strip Steel, also known as Shim Steel



Stock sizes for arbors of following diameters: $\frac{3}{16}$, $\frac{1}{8}$, $\frac{3}{16}$, $\frac{1}{4}$, $\frac{5}{16}$, $1\frac{1}{8}$, $1\frac{1}{4}$, $1\frac{3}{8}$, $1\frac{1}{2}$, $1\frac{5}{8}$, $1\frac{3}{4}$, $1\frac{7}{8}$, 2, $2\frac{1}{4}$, $2\frac{1}{2}$, 3, $3\frac{1}{2}$ and 4 in. and larger.

Stock thicknesses: .002, .003, .004, .005, .006, .007, .008, .010, .012, .015, .020, .025, .032, .047, .063, .093 and .125 inch.

Other thicknesses up to 3.000" made to order, with keyways if so ordered.

Ask us to send samples; you'll like them

Detroit Stamping Company
3443 West Fort St., Detroit, Mich.

MARKING DEVICES



THE SCHWERTLE STAMP CO.
BRIDGEPORT, CONN.

U. S. Sensitive 14" Floor Drill Motor Driven

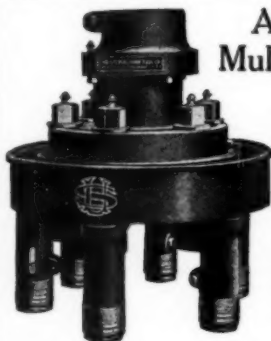
A simple, rugged, convenient drill; built by machine tool manufacturers. Drills holes up to $\frac{1}{2}$ "—quickly, accurately and economically.

Price with motor, switch and belts - **\$115**

Or with Counter-shaft for Belt Drive **\$70**

Steel spindle, ground to size, with ball thrust bearing; vertical adjustment to head; tables for long and short work; three speeds, etc. Write for folder, or better still send in your order.

The U. S. Machine Tool Co.
1952 W. 6th St., Cincinnati, Ohio



Any Pattern Multiple Drilling

With this attachment on your "hole-at-a-time" spindle you can drill two or more holes, utilizing the same speeds and feeds you use for one. The—

U. S. Multiple Spindle Drill Head

has a patented double adjustment which permits drilling in any pattern. It does the work of a multiple spindle drill press at a fraction of the cost.

Send us work or a blueprint for cost estimate

The United States Drill Head Co., 1952 W. Sixth St., CINCINNATI, O.
Michigan Agents—National Sales Engineering Corp., Detroit, Mich.

Over 100 Shapes and Sizes of
Armstrong Tool Holders

SAVE h. s. Steel, 90%; Grinding, 70%; Forging, 100%



We also make—all of Armstrong quality—

Ratchet Drills
 Drilling Posts
 Drill Drifts
 Drill Vises

Lathe Dogs
 Clamps
 Wrenches
 Planer Jacks

Bolt Drivers
 Tool Posts
 Drill Sleeves
 and Sockets

Glad to mail you Catalogs; write for them

Armstrong Bros. Tool Co.

"THE TOOL HOLDER PEOPLE"

308 N. Francisco Ave., Chicago

Towsley Trucks PAY 500%

**—Every Year On
 Their Cost Price**



**Many Sizes and Styles
 from \$10 up.**

Glad to tell
 you how

**TOWSLEY
 TRUCKS**

repay their
 cost every
 two to three
 months.

Every style
 for every
 need.

Write for facts and figures; you'll never regret it

**John T. Towsley Mfg. Co., Cincinnati,
 Ohio, U. S. A.**

"SAUNDERS"

Pipe Threading and Cutting Machines

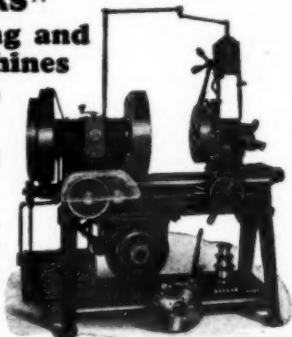
Motor Driven

**For Plumbing,
Steamheating and
Industrial Plants**

No. 4-B range $\frac{1}{2}$ to 4" Incl.
No. 5-D range 1 to 6" Incl.

Full line to meet all re-
quirements, $\frac{1}{4}$ to 18" Incl

Send for catalog



D. Saunders' Sons, Inc.
31 Atherton Street, Yonkers, N. Y.



**"Wear Ever"
Adjustable
Spacing Collar**

**For Milling Machine
Arbors**

Hardened Ground
SAVE SET-UP TIME

**"A GOOD COMBINATION"
HARDENED & GROUND SOLID SPACING COLLARS**

Ends are
ground parallel,
lengths
are accurate



Made of
Alloy Steel
hardened

All thicknesses and standard arbors carried in stock for immediate delivery.

SCULLY-JONES & CO., Tool Division
1901 S. Rockwell St., Chicago, Ill.

The Acme of Convenience

Springfield
Straightening
Press—



Made in
3 Sizes

Made in
Three sizes
Each a real
Time saver

Wherever straightening is needed, the Springfield gives satisfaction. Whether in shop, tool room, or garage. It can be operated with such accuracy and speed that users have named it *the acme of convenience*.

Placed near lathe or bench, for example, a tool maker can straighten any length of rough or unfinished work without leaving his post.

A Springfield quality product! Let us send a catalog

The Springfield Machine Tool Company
633 West Southern Avenue, SPRINGFIELD, OHIO
We also manufacture Engine Lathes and Shapers

Balancing Ways

Anderson Improved are Always Ready



Made in six sizes for balancing anything that turns on a shaft, up to 24,000 lbs.—pulley, gin brushes, turbine rotors, crank shafts, polishing wheels, fly wheels, etc.; also for testing straightness of shafts, crank shafts, etc. No centers required; no leveling. Always ready and accurate; very sensitive.

"Swing"	20"	40"	60"	72"	96"	72"
Greatest distance bet. standards..	20"	30"	30"	66"	88"	20"
Capacity in lbs.	1000	2000	2000	5000	10000	24000
Approx. shipping weight.....	45	90	150	350	650	
Code.....	Bend	Bid	Bis	Bib	Ben	

Any of above can be furnished with longer shafts

Anderson Bros. Mfg. Co.
1915 Kishwaukee St., Rockford, Ill.



TUCKER Oil Hole Covers

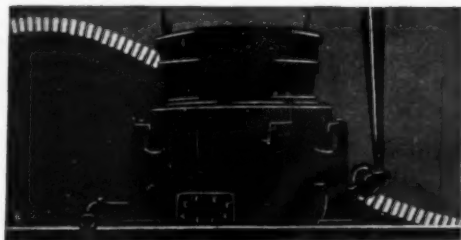
ALSO—HERCULES
SHEAR AND ROD CUTTERS
AND
SCREW MACHINE PRODUCTS

A Type for Every Service

Send for Catalogue No. 12

W. W. & C. F. TUCKER, INC., 612 Capitol Ave.,
Hartford, Conn.

*FOREIGN AGENTS: Fenwick Freres & Co., Paris, France
Alfred Herbert, Ltd., Yokohama, Japan*



**Save
Cutting
Oil!**

6 to 15 gallons per load—
three or four loads per
hour. Write for catalog.

Tolhurst Machine Works
Established 1852
Troy, N. Y.

Burke Bench Millers

**FOR
Accuracy
Convenience
Economy**

On small milling operations, where accuracy as well as production must be had, are the places to use Burke Bench Milling Machines.

*Built in various sizes, both
hand and power feed,
and at prices ranging
from \$125
to \$220.*

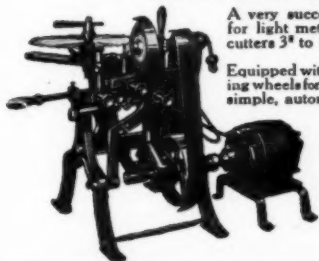


\$155

**BURKE
No. 3.**

The Burke Machine Tool Co., 227 East 18th Street,
Conneaut, Ohio

HERE'S YOUR Low Cost, Low Priced Grinder For Small Milling Cutters



A very successful, up-to-date grinder for light metal cutting saws or milling cutters 3" to 18" dia.

Equipped with 3 aloxite redmanal grinding wheels for extra fine grinding. Sturdy, simple, automatic Belt or Motor drive.

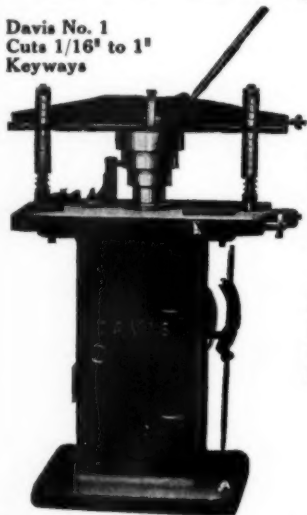
*Ask for our low price on
No. 1 Milling Cutter Grinder*

**Samuel C. Rogers & Co.
211 Dutton Ave.
BUFFALO, NEW YORK**

Speed in Quantities or Varied Lots

The Davis Keyseater

Davis No. 1
Cuts $1/16"$ to $1"$
Keyways



For cutting
keyways in
pulleys, gear
blanks, crank
handles, etc.

And for oil
grooving and
work of a
similar nature

Whether you want quantity production of standard parts, or versatility to meet varied requirements, the Davis gives satisfaction. It takes every job as it comes, performing it accurately and with speed. The Davis is designed with such operating convenience that there are no complicated parts to get out of order.

Write for a complete description of this productive, low-cost tool

Davis Keyseater Company

255½ Mill St.,

Rochester, N. Y., U. S. A.

Analysis of Circulation of HITCHCOCK'S MACHINE TOOL BLUE BOOK

By Dun and Bradstreet Ratings

	Number Concerns
Exceeding \$1,000,000.....	1,483
\$500,000 to \$1,000,000.....	916
\$300,000 to \$ 500,000.....	948
\$200,000 to \$ 300,000.....	842
\$125,000 to \$ 200,000.....	1,305
\$ 75,000 to \$ 125,000.....	1,455
\$ 50,000 to \$ 75,000.....	1,162
\$ 20,000 to \$ 50,000.....	2,847
\$ 10,000 to \$ 20,000.....	1,879
\$ 5,000 to \$ 10,000.....	1,672

TOTAL, Private Concerns Rated over \$5,000.. 14,509

Steam and Street Railway Mechanical and
Purchasing Officials, Government and Muni-
cipal Plants, Technical Schools, Foreign
Dealers in American Machinery, Etc.,..... 3,470

TOTAL to Buyers of Known Responsibility.. 17,979

*Concerns quoted in Dun or Bradstreet, but
without Capital Rating..... 2,802

Concerns not yet in either Dun or Bradstreet,
but in current Telephone Directories..... 1,799

Concerns rated below \$5,000 2,677

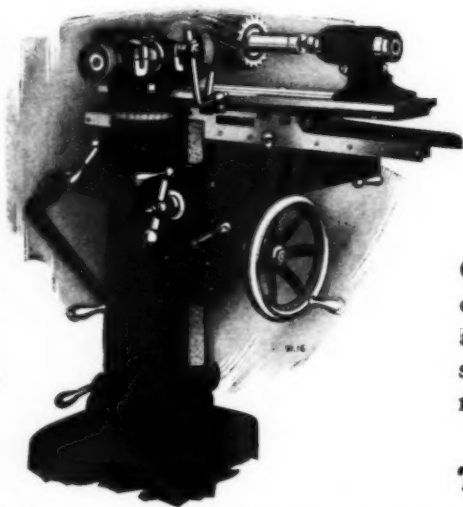
TOTAL CIRCULATION 25,257

*This group includes a considerable number of large concerns,
and many small concerns of high credit, whose capital rating is
not given by either of the commercial agencies.

LeBlond

Motor Driven Universal Tool

Grinder

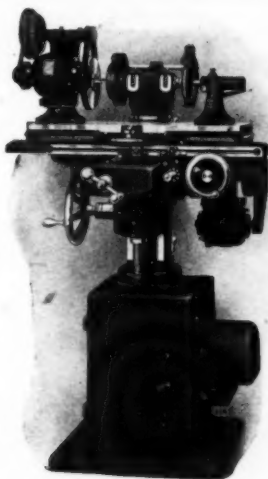


GRINDING TEETH OF SPIRAL MILLING CUTTER

For
Can be
complete
automat
simplified
ment is

The R. L.

Tool Room

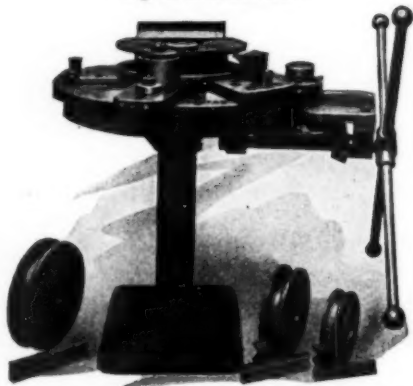


For all phases of tool room grinding. Can be furnished either with plain or complete equipment. In addition to automatic power feed to the table, a simplified integral motor drive arrangement is offered.

R. K. LeBlond Machine Tool Co.
CINCINNATI, OHIO

A New Horizontal Pipe Bender

By *PEDRICK*



Universal satisfaction for the past 20 years has been the keynote of our success with bending pipe.

Recently we have made *two* radical departures, viz., the horizontal table and the improved bending principle, which offers decided advantages in *Time-saving, Convenience* and *Superior Work*.

Iron, steel, galvanized and copper pipe are bent cold and unloaded on the radii of the rolls. For 2" and under.

We have a Bulletin awaiting for you.

SEND FOR IT NOW.

Pedrick Tool & Machine Co.

3644 N. Lawrence St., Philadelphia, Pa.

Manufacturers of Cylinder Boring Bars, Portable Millers,
Crank Pin Turning Machines, etc.

Would You Like to Save

From 65 to 85% on Your
Screw Driving Costs?



Showing Magazine Feed of the Reynolds Automatic

With the Reynolds Automatic Screw Driver, the Magazine Feed does all the handling of screws. All the operator does is pour a gross or more of screws into the hopper, handle work with both hands, and press a foot lever. **RESULT:** a boy or girl easily drives 800 to 1,200 screws an hour and an experienced operator up to 2,000, resulting in a time and labor cost saving of from 65 to 85%.

Drop us a line, giving dimensions over all of your work and length and gauge of screws used. We'll send facts and figures that may surprise you.

The Reynolds Machine Company
Dept. H. H., Massillon, Ohio

AT LAST!! A Sensible Positive Means for Holding Taps



Ettco

TAP HOLDING CHUCK

A Visible Positive Grip on the Square.
Centers on the Round.

Eastern Tube & Tool Co., Inc., 600 Johnson Ave.,
BROOKLYN, N. Y.

Winterhoff Portable Production Drills

No. 0 JUNIOR DRILL
10½" Swing, 0 to ¾" Capacity



\$55, F. O. B. Elkhart

Equipped with ¼ h. p. motor, two step cone pulley giving speeds of 1100 and 2300 r. p. m., horizontal drive gives full power to the 1¼" endless belt furnished with machine. Driven cone has bearing support at each end; all parts accurately machined and interchangeable. *Positively the greatest value ever offered in a machine of this kind.* Furnished with square machined base at same price.

Drills, Grinders, Disc Grinders,
Saws, Sanders. All motor driven.

*Send for circulars describing these
machines or see your Dealer.*

Winterhoff Tool & Machine Co.

109 South Elkhart Ave.,

Elkhart, Ind., U. S. A.

Lourie Hydraulic Machinery

High Speed and Heavy Duty

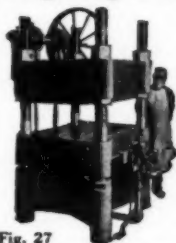


Fig. 27

Presses

For

Every Purpose

Lourie Mfg. Co.

2740 Yale Blvd., Springfield, Ill.

Throwing Light in Dark Places

PATENTED
Jan. 30, 1917



Type 6
MODEL 1925

is easy with the aid of
AUTEX Extension Reel

Goes wherever you need or want it. Saves time and eye-strain, speeds up work and quickly pays for itself. Nothing is more important in the production of good work than good light. Machine shops, manufacturers, industrial plants of all kinds are using AUTEX.

ARE YOU?

Approved by the Underwriters

Equipped with Rubber Covered Cord

Write for descriptive circular

The Cincinnati Specialty Mfg. Co., Inc.

1903 Powers St.,

Cincinnati, Ohio

Screw Machine Products

**Up to 1 $\frac{3}{4}$ "
Diameter**

Any Quantity

**Steel — Brass — Bronze
Stainless Steel — Rustless Iron**

Accuracy and Prompt Delivery

The Gravity Carburetor Co.

Machine Screw Department

3068 East 93rd St.,

Cleveland, Ohio



Hollow Bored Forgings and Steel Shafts

If they're "American" you can depend upon them being sound, accurate and fair priced. Unusual facilities enable us to offer exceptional delivery and reasonable prices. Without obligation, we gladly offer our many years of experience to aid in solving any of your forging problems.

Send blueprints for trial order or quotation

**American Hollow Boring Co.
Erie, Penna.**

"D & W" Flat & Rotary Magnetic Chucks



Our Extensive Line covers a wide range. They save time and cut costs holding iron and steel pieces. Glad to investigate and report on any problem you may have in connection with the use of Flat and Rotary Magnetic Chucks. Address

J. & H. Electric Co.
159 Clifford St., Providence, R. I.

We
Will Contract
To Build your Tool or
Machine
Quote on
Jigs — Fixtures — Dies
Turret Lathe Work

Modern-Bond Corp.
823 West 5th Street
Wilmington, Delaware



Sensitiveness and Precision

are the leading characteristics of

The A. M. Sensitive Drilling Machine

A self-contained, mobile bench unit of vertical type that can be used for a variety of operations coming within its capacity. Its prime purpose is drilling from .010" to sizes that can be handled on the ordinary drill press. Also adaptable for reaming, chamfering, counter-boring, burnishing, damaskeening and some classes of end milling. Economies effected by its use seldom fall under 25% and often production is doubled. Three sizes, unconditionally and permanently guaranteed against any defect.

Write for Booklet "C"

ADOLPH MUEHLMATT

434-436 Elm St.,

Cincinnati, Ohio

Size No. 1

Also
two
larger
models



When a Tap Breaks —That's Enough



Your loss will stop there if you have a handy **WALTON TAP EXTRACTOR** in your shop.

Simply insert the flutes of this time-saving tool into the broken tap, twist the end, and the tap slides out. A **WALTON** obviates delays and operates so simply that an apprentice can handle it.

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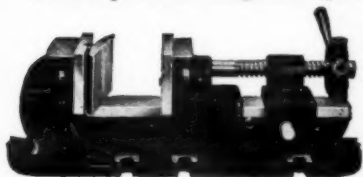
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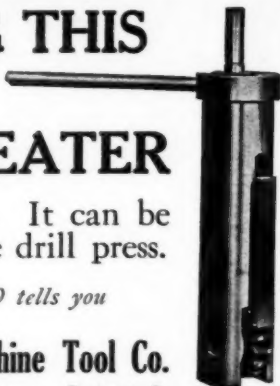
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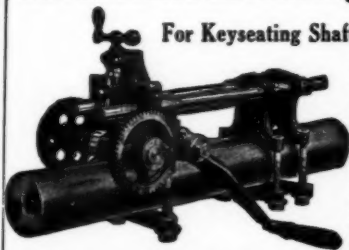
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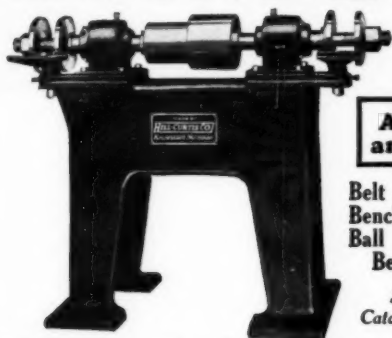
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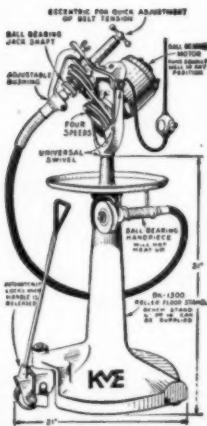
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Reliance Electric & Eng. Co., Cleveland

Name Plates, Etched and Stamped

Schwerdtle Stamp Co., Bridgeport, Conn.

Oil Caps

Gita Bros. Mfg. Co., 1940 S. Kilbourn Ave., Chicago
Tucker, W. W. & C. F., Hartford, Conn.

Oil Extractors

Tellurist Machine Works, Troy, N. Y.

Oil Grooving Attachments

Cisco Machine Tool Co., Cincinnati, Ohio

Oil Hole Covers

Tucker, W. W. & C. F., Inc., Hartford, Conn.

Pattern Shop Machinery

Towsley Mfg. Co., John T., Cincinnati

Pins, Leader and Dowel

Danly Machine Specialties, Inc., 4913 Lincoln Ave., Chicago

Pipe Bending Machines

Fedrick Tool & Machine Co., Philadelphia

Pipe Cutters, Hand

Saunders' Sons, D., Inc., Yonkers, N. Y.

Pipe Cutting and Threading Machines

Chicago Pipethread Co., Racine, Wis.
Gardner Mfg. Co., Mantoloking, N. J.
Saunders' Sons, D., Inc., Yonkers, N. Y.

Pipe Threading Dieheads

Saunders' Sons, D., Inc., Yonkers, N. Y.

Pipe Vises

Saunders' Sons, D., Inc., Yonkers, N. Y.

Planers, Openside

Cleveland Planer Company, Cleveland, O.

Planers, Valve Seat, Portable

Fedrick Tool & Machine Co., Philadelphia

Point Thinning Machines

Oliver Instrument Co., Adrian, Mich.

Polishing and Buffing Machines

Cisco Machine Tool Co., Cincinnati, O.
Hill-Curtis Co., Kalamazoo, Mich.
Hisey-Wolf Machine Co., Cincinnati, O.
Mail Tool Co., 7730 S. Chicago Ave., Chicago
New Britain Machine Co., New Britain, Conn.
North Side Tool Co., Dayton, Ohio
Standard Electrical Tool Co., Cincinnati, O.

Presses, Arbor

Atlas Press Co., Kalamazoo, Mich.
Lourie Hydraulic Co., Springfield, Ill.
Nicholson & Co., W. H., Wilkes-Barre, Pa.
Wilson, R. K., Buffalo, N. Y.

Presses, Broaching

Lourie Hydraulic Co., Springfield, Ill.

Presses, Drawing

Lourie Hydraulic Co., Springfield, Ill.

Presses, Flanging

Lourie Hydraulic Co., Springfield, Ill.

Presses, Foot

Rockford Iron Works, Rockford, Ill.
Taylor & Fenn Co., Hartford, Conn.

Presses, Forcing

Lourie Hydraulic Co., Springfield, Ill.
Lucas Machine Tool Co., Cleveland, O.

Presses, Forming

Lourie Hydraulic Co., Springfield, Ill.

Presses, Power

Hendley & Whittemore Co., Beloit, Wis.
Lourie Hydraulic Co., Springfield, Ill.
Lucas Machine Tool Co., Cleveland, O.
Rockford Iron Works, Rockford, Ill.

Presses, Punch

Lewthwaite Mch. Co., T. H., 417 E. 31st., N. Y.
Rockford Iron Works, Rockford, Ill.

Presses, Screw

Jarecki Mch. & T. Co., Grand Rapids, Mich.
Towsley Mfg. Co., John T., Cincinnati

Presses, Wheel

Lourie Hydraulic Co., Springfield, Ill.

Profiling Machines

Oliver Instrument Co., Adrian, Mich.

Pulley Machinery

Avery Drilling Machine Co., Cincinnati

Pulleys, Iron, Solid and Split

Conway Clutch Co., Cincinnati, O.

Classified Finding Index

Pumps, Coolant
Fulfilo Specialist Co., Blanchester, O.

Pumps, Hydraulic
Laurie Hydraulic Co., Springfield, Ill.

Pumps, Lubricant
Bathman Machinery Co., Cincinnati, O.

Punch Press Feeds
Rockford Iron Works, Rockford, Ill.
Witteh Mfg. Co., 2552 S. Kodale Ave., Chicago

Punch, Shear and Bender, Hand
Armstrong-Blum Mfg. Co., 341 N. Francisco Ave., Chicago

Punches, Hand
Armstrong-Blum Mfg. Co., 341 N. Francisco Ave., Chicago
Hendley & Whittemore Co., Beloit, Wis.
Hyo Mfg. Co., 352 W. 13th, New York
Leuthwaite Mch. Co., T. H., 417 E. 31st St., New York
Whitney Metal Tool Co., Rockford, Ill.

Punches, Power
Hendley & Whittemore Co., Beloit, Wis.

Punches and Dies
Hendley & Whittemore Co., Beloit, Wis.
Leuthwaite Mch. Co., T. H., 417 E. 31st, N. Y.
Rockford Iron Works, Rockford, Ill.

Racks, Bar Stock
New Britain Machine Co., New Britain, Conn.
Pollard Bros. Mfg. Co., 4038 N. Tripp Ave., Chicago
Yoke Supply Co., Wm. S., Canton, O.

Reamers, Adjustable
Schellenbach-Hunt Tool Co., Cincinnati, O.

Reamers, Expanding
Lambert Mch. & Engr'g Co., Cleveland, O.

Reamer Holders
Nicholson & Co., W. H., Wilkesbarre, Pa.

Reels, Extension
Cincinnati Specialty Mfg. Co., Cincinnati, O.

Riveting Machines
Grant Mfg. & Mch. Co., Bridgeport, Conn.

Rad Cutters
Armstrong-Blum Mfg. Co., 341 N. Francisco Ave., Chicago
Hendley & Whittemore Co., Beloit, Wis.
Leuthwaite Mch. Co., T. H., 417 E. 31st, N. Y.
Tucker, W. W. & C. F., Inc., Hartford, Conn.

Saw Sharpening Machines
Wardwell Mfg. Co., Cleveland, O.
Rogers & Co., Samuel C., Buffalo, N. Y.

Scraping Machines, Hand & Pneumatic
Anderson Brothers Mfg. Co., Rockford, Ill.

Screw Drivers, Electric
Elsey-Wolf Machine Co., Cincinnati, O.

Screw Driving Machines, Automatic
Bernoldi Machine Co., Hamilton, Ohio

Screw Machine Products
Gravity Carburetor Co., Cleveland, O.

Screw Machines, Automatic
New Britain Mfg. Co., New Britain, Conn.

Set-Up Appliances
Standard Shop Equip. Co., Inc., Philadelphia

Shafts, Flexible
Haskins Co., R. G., 4636 W. Fulton, Chicago
Keller Mech. Eng. Corp., 58A Washington St., Brooklyn, N. Y.
Mall Tool Co., 7730 S. Chicago Ave., Chgo.
New Flexible Shaft Co., Philadelphia, Pa.
Strand Co., N. A., 5901 N. Lincoln St., Chgo.

Shafts, Steel
American Hollow Boring Co., Erie, Pa.

Shaping Machines
American Tool Works Co., Cincinnati, O.
Osborne & Sexton Machy. Co., Columbus, O.
Rhodes Mfg. Co., Hartford, Conn.
Smith & Mills Co., Cincinnati
Springfield Machine Tool Co., Springfield, O.

Shears, Alligator
Canton Foundry & Machine Co., Canton, O.

Shears, Hand
Armstrong-Blum Mfg. Co., 341 N. Francisco Ave., Chicago
Hendley & Whittemore Co., Beloit, Wis.
Leuthwaite Machine Co., T. H., 417 E. 31st St., New York
Oliver Mfg. Co., W. W., Buffalo, N. Y.
Tucker, W. W. & C. F., Inc., Hartford, Conn.
Whitney Metal Tool Co., Rockford, Ill.

Shears, Power
Hendley & Whittemore Co., Beloit, Wis.

Slotting Machines
Rhodes Mfg. Co., Hartford, Conn.

Spacing Washers
Detroit Stamping Co., Detroit, Mich.

Special Tools and Machinery
Bradford Machine Tool Co., Cincinnati, O.
Foote Bros. Gear & Machine Co., 213 Curtis St., Chicago
Gateman Mfg. Co., Manitowoc, Wis.
Groetchem Tool & Mfg. Co., 721 Fulton, Chicago
Stecher Co., Chas., 2452 N. Greenview Ave., Chicago
U. S. Tool Co., Inc., Ampere, N. J.

Speed Reducers
Foote Bros. Gear & Machine Co., 213 Curtis St., Chicago

Sprockets
Foote Bros. Gear & Machine Co., 213 Curtis St., Chicago
Massachusetts Gear & T. Co., Woburn, Mass.

Stamps, Steel and Rubber
Schwerdtle Stamp Co., Bridgeport, Conn.

Stencils, Brass and Oil Board
Schwerdtle Stamp Co., Bridgeport, Conn.

Stools and Chairs, Factory
Chicago Wire Chair Co., 619 N. La Salle St., Chicago
Pollard Bros. Mfg. Co., 4038 N. Tripp Ave., Chicago

Straightening Machines
Springfield Machine Tool Co., Springfield, O.
Towley Mfg. Co., John T., Cincinnati
Whitney Metal Tool Co., Rockford, Ill.

Tap Extractors
Walton Co., Hartford, Conn.

Tap Holders
Gateman Mfg. Co., Manitowoc, Wis.

Tapping Machines and Attachments
Avey Drilling Machine Co., Cincinnati
Burke Machine Tool Co., Cosneaut, Ohio
Cineo Machine Tool Co., Cincinnati, Ohio
Eastern Tube & Tool Co., Inc., 680 Johnson Ave., Brooklyn, N. Y.
Gateman Mfg. Co., Manitowoc, Wis.
Leland-Gifford Co., Worcester, Mass.
Rickert-Shafer Co., Erie, Pa.
Whitney Metal Tool Co., Rockford, Ill.

Classified Finding Index

Thread Dies

Colven, J. M., Yorkers, N. Y.

Thread Milling Attachments

Cisco Machine Tool Co., Cincinnati, O.

Threading Machines

Gateman Mfg. Co., Manitowoc, Wis.

Rickert-Shafer Co., Erie, Pa.

Threading Tools

Armstrong Bros. Tool Co., 308 N. Francisco
Av., Chicago

Tool Holders

Armstrong Bros. Tool Co., 308 N. Francisco
Av., Chicago

Western Tool & Mfg. Co., Springfield, O.

Tool Racks

Chicago Wire Chair Co., 339 N. La Salle St.,
Chicago

Tool Stands

Pollard Bros. Mfg. Co., 4038 N. Tripp Ave.,
Chicago

Tools, Boring

Armstrong Bros. Tool Co., 308 N. Francisco
Av., Chicago

Tools, Lathes and Planer

Armstrong Bros. Tool Co., 308 N. Francisco
Av., Chicago

Tools, Machinists'

Armstrong Bros. Tool Co., 308 N. Francisco
Av., Chicago

Tools, Spot Facing

Genesee Mfg. Co., Rochester, N. Y.

Trucks, Machine Shop

New Britain Machine Co., New Britain, Conn.

Pollard Bros. Mfg. Co., 4038 N. Tripp Ave.,
Chicago

Towley Mfg. Co., John T., Cincinnati

Turntables

Canton Foundry & Machine Co., Canton, O.

Universal Joints

American Tool Works, Inc., Hartford, Conn.

Borgeson Mfg. Co., Inc., Torrington, Conn.

Boston Gear Works Sales Company, Norfolk
Downs, Mass.

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Bennett Mch. Co., 50 Church St., New York

Bernstein & Co., Geo. M., 549 W. Washing-
ton Blvd., Chicago

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Brownell Machinery Co., Providence, R. I.

Carlson Machinery Co., Davenport, Iowa

Central States Machinery Co., 134 South
Clinton, Chicago

Cincinnati Mch. & Supply Co., Cincinnati, O.

Clark Machinery Co., Cleveland, O.

Davis Machinery Exchange, Toledo, O.

Della Equipment Co., Philadelphia, Pa.

Donshue Steel Products Co., 74th and
Ashland Ave., Chicago

Eastern Machinery Co., Cincinnati, O.

Empire Machinery Exchange Co., Inc.,
Cleveland, Ohio

Eesley Machinery Co., E. L., 545 Washington
Bldg., Chicago

Fitzsimmons-Cole Mch. Co., Pittsburgh, Pa.

Foster Machinery Co., Cleveland, O.

Grill, Henry F., 130 William St., New York

Harris Bros. Co., 35th & Iron, Chicago

Hill, Clarke & Co., 649 W. Washington
Bldg., Chicago

Hyman & Sons, Joseph, Philadelphia

International Mch. Co., Detroit, Mich.

Johnson & Sons Machinery Co., Wm. C.,
St. Louis, Mo.

Jones Machine Tool Co., Cincinnati, O.

Kinsley Co., E. A., Cincinnati, O.

Krauber Mch. Co., E. L., St. Louis

Lee Machinery Co., Inc., Detroit, Mich.

Little Co., W. F., Cleveland, O.

McCabe Lathes & Machinery Corp., J. J.,
169 Broadway, New York

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McDonald Machinery Co., St. Louis

McMullen Mch. Co., Grand Rapids, Mich.

Manning, Maxwell & Moore, Inc., 27 No.
Jefferson, Chicago

Marr-Galbreath Mch. Co., Pittsburgh, Pa.

Marsh Machinery Co., A. R., Cleveland, O.

Midland Equipment Co., 612 W. Van Buren,
Chicago

Mid-West Machine Tool & Supply Company,
Davenport, Iowa

Miles Machinery Co., Saginaw, W. S., Mich.

Mittler Mch. Co., Chas., 118 S. Clinton St.,
Chicago

Morcy and Co., Inc., 408 Broome St., N. Y.

Morris Machinery Co., Inc., Newark, N. J.

Motch & Merryweather Machinery Co.,
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Niles Tool Works Co., Hamilton, O.

Norton-Broadway Mch. Co., Cincinnati, O.

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Passman Bros., 705 W. Washington Blvd.,
Chicago

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Reid Machinery Co., Cincinnati, O.

Reeve-Fritts Co., 37 S. Desplaines, Chicago

Reliance Mch. Sales Co., Pittsburgh, Pa.

Rentschler & Co., J. F., 30 N. Jefferson St.,
Chicago

Riverside Machinery Depot, Detroit, Mich.

Rosenfeld Mch. Co., 343 W. Lake St., Chgo.

Russell Machine Co., Pittsburgh, Pa.

Saltzman, E. L., 808 W. Lake St., Chicago

Selfe-Bates Machinery Co., Dayton, O.

Severin-Strafer Machinery Corp., 50 Church
St., New York

Simmons Machine Tool Corp., Albany, N. Y.

Stoehr Machinery Co., A. M., 418 Mid-City
Bank Bldg., Chicago

Strong, Carlisle & Hammond Co., Cleveland

San Machinery Co., Newark, N. J.

Syracuse Supply Co., Syracuse, N. Y.

Taylor-Hall Welding Corp., Worcester, Mass.

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Tubor, Velick & Co., Inc., Lake & Desplaines
Sts., Chicago

United Mch. & Supply Co., St. Louis

Wayne Machinery Co., Ft. Wayne, Ind.

Wertman Mch. Co., M. A., Cleveland, O.

White Mch. Co., A. D., 108 N. Jefferson
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Winterer, Herman L., Philadelphia

Vices, Drilling Machine

Armstrong-Bum Mfg. Co., 341 N. Francisco
Av., Chicago

Armstrong Bros. Tool Co., 308 N. Francisco
Av., Chicago

Central Distributing Co., Detroit, Mich.

Demco, Incorporated, Baltimore, Maryland

Marsh Machinery Co., A. R., Cleveland, Ohio

Martin Tool & Die Works, J. S., Springfield, O.

Vices, Machinists'

New Britain Machine Co., New Britain, Conn.

Western Tool & Mfg. Co., Springfield, O.

Vices, Milling Machine

Hartford Special Mch. Co., Hartford, Conn.

Marsh Machinery Co., A. R., Cleveland, Ohio

Welders, Electric Spot

Taylor-Winfield Corp., Warren, O.

Wood Working Machinery

Hendley & Whittemore Co., Beloit, Wis.

New Britain Machine Co., New Britain, Conn.

Porter-Cable Machine Co., Syracuse, N. Y.

Towley Mfg. Co., John T., Cincinnati

Worms

Massachusetts Gear & T. Co., Woburn, Mass.

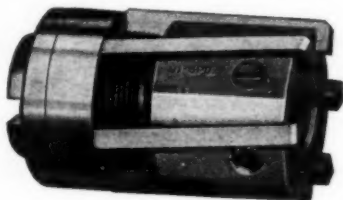
Wrenches, Nut

Greene, Tweed & Co., 109 Duane St., N. Y.

Wrenches, Ratchet

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Reamers made with Left Hand Angle Cutting Blades do not dig in, and all chatter is eliminated. This means free, clean cutting, smooth holes, and increased production.

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Lists of Used and Rebuilt Machinery, either For Sale, Wanted or For Exchange, set in uniform style, will be published in the Classified Section at the rate of **50 cents a line**, across the page, each issue, plus **\$2.50** for name and address. Minimum charge, **\$5.00**. No display permitted.

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Jackson die sinker, with vertical milling spindle and slotting attach..\$650.00

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Both of these tools are in condition equal to a new machine, at a price that is less than one-half of the new price.

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Lathe, 8x60 Fitchburg lo-swing.

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Miller, Oesterlein universal.

Millers, Wisconsin hand, (3).

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Straightener, No. 24 Corey.

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Radial, 5' Pond.

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Shaper, 24" Queen City, with swivel vise.

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Turret lathe, 21" Gisholt.

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No. 3 G. S. Hendey universal.

No. 4-B heavy B. & S. plain. m. d.

No. 4 G. S. Hendey pl., vert. att.

No. 3 G. H. LeBlond heavy plain.

No. 2-B heavy B. & S. plain.

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Ingersoll adjustable rail 43"x30"x9".

Newton slab 28"x28"x13".

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72"x48"x12" Pond, 4 heads.

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32"x32"x 8" Powell.

24"x24"x 6" Whitcomb.

17"x20"x 4' Whitcomb.

17"x17"x 4' Whitcomb.

24" Hendey friction shaper.

15" Potter & Johnston shaper.

Boynton & Plummer shaper.

20" Smith & Mills shaper s. p. d.

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No. 6 Brown & Sharpe, g. f. h., 2"

No. 2 Bardons & Oliver, g. f. h., 1"

3"x36" J. & L. flat turret.

No. 0 Brown & Sharpe wire feed.

No. 2-G Brown & Sharpe automatic.

No. 0-G Brown & Sharpe automatic.

No. 00 Brown & Sharpe automatic.

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Hammer, 200 lbs. Beaudry Champion

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Radial drill, 5' Prentice.

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26"x11' Wickes, q. c. g.
29"x10' Niles, q. c. g.
19"x10' Draper, patent head.

18"x10' Rahn-Larmon, q. c. g., taper.
18" x 7' Chard, d. b. g., semi q. c. g.
15"x 8' Sidney, q. c., d. b. g., t. a.
14"x 6' Springfield, latest type, tool room type, t. a.
14"x 6' Lodge & Shipley, patent head, taper, pan bed.
14"x8' Lodge & Shipley, q. c.

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3 1/2"x25" Pond, triangle.
3x36" Pratt & Whitney, hollow hex.
20"x7' Bridgeport, 2 1/2", h. s.
19"x7' Fay & Scott, back grd.
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14" x 6 Warner & Swasey.

No. 3 Foster sc. machines 1-5/16" wire feed, (2).
1 1/2"x9" Cincinnati-Acme, wire feed.
No. 4 B. & S., bar feed, all auto. fds.
No. 2 Smurr & Kamen, wire fd., (5).

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48" Almond, sens. radial, post type.
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26" Aurora, sliding head.

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21" Aurora, b. g., p. f.
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No. 5 Brown & Sharpe vertical.
No. 3 Brown & Sharpe, plain, cone type.
No. 3 Hendey, q. c. g.

No. 1 Van Norman hand miller.
No. 3 Becker-Brainard, new model, q. c. g., vertical attachment.
No. 5-C Becker vert., rotary table.

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48"x37"x9' Sellers, 2 heads.
48"x48"x12' Gray, 2 heads.
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25" Woodward & P., crk., gear box.

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4" & 8" Eaton, Cole & B., pipe.
6" Cox, quick opening dies.

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Grinder, No. 8 Diamond, double end, heavy type.
Grinder, disc, No. 17 Bealy.
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Riveter, air, 6" gap Allen, cap. 1 1/2".
Riveter, air, 6" Allen, cap. 1 1/2".
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Rolls, 4' drop end corrugated.
Saw, Q. M. & S. No. 4-B universal, 32" blade.
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Shear, 8' Ohl, No. 20 ga.
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USED AND REBUILT MACHINERY

FOR SALE BY

Chas. Molitor Machinery Co., 118-124 S. Clinton St., Chicago, Ill.
MILLERS.

Beaman & Smith vert. and horiz.
30" Bullard plain.
32" Colburn.
No. 2½ Rockford univ., vert. att., (2).
No. 3 Kemp Smith plain.

No. 34 Ohio enclosed, gear type.
Gooley & Edmund, 2 sizes (4).
No. 3 Bristol vertical.
Smaller sizes B. & S., Rockford, etc.,
hand and power feed (12).

LATHES.

30"x12" LeBlond, q. c. g., tur. att.
38"x14" Wickes semi-q. change.
20"x10" LeBlond q. c. g., tur. att.
20"x 8" American q.c.g., tap. rel. att.
20"x 8" Advance q. c. g.
18"x 9" Chard q. c. g.
20"x10" Springfield, g. hd., sgl. p.
18"x 9" Hamilton q. c. g.
16"x 8" LeBlond q. c. g.

16"x 6" LeBlond, q. c. g., g. hd.
16"x 6" American q. c. g.
16"x 6" Sidney q. c. g.
16"x 6" Morris, q. c. g.
14"x 5" LeBlond, g. hd., prod.
14"x 6" and 16"x8" Hendeys.
W. & S. double key lathe, 6 prec.
bench, large var. different sizes.

SHAPERS AND PLANERS.

20" Steptoe crank.
18" Flather, b. g.
16" Ohio crank, b. g.

15" Potter & Johnston.
14" Gould & Eberhardt crank, b. g.
26"x10" Gray.

SCREW MACHINES AND TURKET LATHES.

No. 2A Warner & Swasey.
No. 6 W. & S., b. g., fr. hd.
No. 4 Warner & Swasey univ.
No. 4 W. & S. p. cross fd.
No. 4 W. & S. b. g., fr. hd. (6).
No. 4 Warner & Swasey plain.
No. 2 W. & S. plain, power feed.
No. 2 Warner & Swasey plain.
2" W. & S. hollow hex. turret.
No. 1 Warner & Swasey.
No. 2 Brown & Sharpe auto. (2).

No. 0 Brown & Sharpe auto. (2).
No. 00 Brown & Sharpe auto. (10).
Brown & Sharpe formers (15).
Brown & Sharpe semi-auto. (4).
No. 53 Nat-Acme 4-spd. motor, (5).
¾" Gridley, 4-spd., auto. (3).
5-spd. New Britain automatic.
Foster, B. & O., Acme pl. & Fox (20).
¾" 3½" Cleveland auto.
2½" Jones & Lamson (3).
¾" cap. Garvin.

PRESSES AND SHEARS.

8' Toledo sq. shear, 3/16" cap.
No. 51 Toledo geared, 6½" str.
No. 34 Swaine geared, 5600 lbs.
60"x16 gauge Bertsch power square
shear, 15" throat.

10'x16-14 gauge Ohl g. sq. shear.
Nos. 0 and 1 Consolidated.
Obermayer sprue cutter.
20" Quickwork rot. shear.
60" Pettingell rot. shear.

DRILL PRESSES AND RADIALS.

36" American sensitive.
32" Superior M. Co., b. g., gear box.
26" Aurora, sl. hd., g. b., tapp. (2).
16-spindle Nat. Auto. Mch. Co.
4-spindle Turner turret.

1-spindle Sipps, comp. table (2).
2 spindle Avey, tap. att. (2).
Single spindle Avey, ¾"-4" (2).
2-spindle Henry & Wright, 1" cap.
Large variety, different sizes.

BOLT CUTTERS AND GRINDERS.

2" Acme, with lead screws (2).
1½" Geometric.
1" Landis (2).
1" Acme.
¾" Acme.
12"x72" Brown & Sharpe cylindrical.
No. 12 B. & S. cylindrical.
8"x32" Norton cylindrical.

3"x18" Landis cylindrical.
Landis cam grinder (2).
B. & S. cutter reamer (2).
4" Waltham bench gear cutter.
Garvin die slotter.
2 and 3 jaws Barker chucks (12).
100 Warner & S. boring, box tools,
etc., for Nos. 4, 2A and 3A.

FOR SALE BY

Aetna Machinery Co., Not Inc., 565 W. Washington Blvd., Chicago
Automatic tapping machine, Garvin No. 1, cap. ¾" c. i.
Drill press, No. 1, Leland-Gifford 2-spindle, 12" swing, capacity ¾".
Grinder, No. 12 Besly disc, 26" with universal attachment.
Hack saw, No. 5 Marvel high speed automatic, capacity 6"x6".
Punch, Excelsior No. 20 quick action, capacity 5/16" in ¾", 20" throat.

USED AND REBUILT MACHINERY

FOR SALE BY

Severin-Strafer Machinery Corp., 30 Church St., New York City

BORING MILLS, VERTICAL.

- | | |
|-----------------------------------|--------------------------------------|
| 14'-20' Betts, extension type. | 42" Bullard, turret head. |
| 60" Bullard, single pulley drive. | 42" King modern rapid traverse. |
| 38"-44" N. B. P., side head. | 40" King turret and plain head. |
| 48" Gisholt, rapid traverse. | 52" Niles-B.-P. turret & plain head. |

BORING MILLS HORIZONTAL.

- | | |
|---------------------------------------|---|
| 5" bar Newark, knee type. | 4 1/2" bar Niles-B.-P., floor type. |
| 5" bar Beamen & Smith floor type. | 5" bar N.-B.-P. belt dr., col. travel |
| No. 1 Betts 3" bar, knee type. | 10' floor plate 16' x 11' rapid traverse. |
| 5" bar Deitrich & Harvey, floor type. | 3" bar Lucas single pulley drive. |

BOLT AND PIPE CUTTERS.

- | | |
|---------------------------------|--------------------------------|
| Acme 1", double head. | 2" National single head bolt. |
| Acme 3", single spindle. | 2" Standard, double head bolt. |
| No. 2 Merriman 1 1/2" capacity. | 12" Saunders, pipe belt drive. |

COMPRESSORS.

- | | |
|------------------------------------|------------------------------------|
| 5000' Bury direct connected, a. c. | Sullivan horizontal, belt 8" x 10" |
| 10" x 10" Curtis duplex. | Garage outfit, motor drive. |

DRILLS.

- | | |
|--|--------------------------------|
| 3' Fosdick radial, latest, s. p. d. | No. 25 Foote-Burt, heavy duty. |
| 5' Niles B. P., semi-universal radial, | 23" Snyder (new). |
| speed box drive, tilting table. | 36" Aurora, sliding head. |
| No. 11 Natco, 12-spindles. | 2-spindle Avey, h. s. |

GRINDERS.

- | | |
|---------------------------------|-------------------------|
| No. 12 Brown & Sharpe plain. | 18" Bealy disc. |
| No. 13 Brown & Sharpe plain. | 84" Diamond surface. |
| No. 4 Gardner disc, rim wheels. | 36" x 144" Landis roll. |

LATHES.

- | | |
|--|---------------------------------|
| 72" x 40' Sellers, rapid traverse. | 22" x 12' Niles oil country. |
| 54" x 24' H. S. and M. quick change. | 18" x 18" Reed, belt drive. |
| 48" x 18' Fifield t. g. | 16" x 8' Lodge & Shipley, b. d. |
| 42" x 36' Bridgeford, geared head. | 16" x 8' Hendey. |
| 30" x 16' N. B. P., motor drive, d. c. | 16" x 8' Pratt & Whitney, g. h. |
| 27" x 14' Beaman, taper attachment. | 14" x 6' Hendey. |
| 24" x 27' Flather (new). | 3A Warner & Swasey turret. |
| 24" x 12' Reed-Prentice, g. h. | No. 4 Warner & Swasey. |

MILLING MACHINES.

- | | |
|------------------------------|-------------------------------------|
| No. 3 Cincinnati plain. | No. 2B Brown & Sharpe, heavy. |
| No. 3 Garvin hand miller. | No. 14A Garvin dividing hds., comp. |
| No. 4 Cincinnati high power. | No. 7H Becker, Lincoln type. |

PLANERS.

- | | |
|--|--------------------------------------|
| 96" x 72" x 24' D. & H. openside. | 42" x 42" x 26" N. B. P., rev. m. d. |
| 72" x 72" x 18' Pond, rev. motor drive. | 30" x 30" x 16' Gray, 3 heads. |
| 60" x 48" x 14' Cincinnati, gr. box, m. d. | 22" x 22" x 4' Whitcomb, 1 head. |
| 42" x 42" x 30' new Niles-Bement-Pond. | |

PUNCHES AND SHEARS.

- | | |
|-------------------------------------|---|
| No. 5 Hillis & Jones 48" th., m. d. | No. 4 Hillis & Jones horiz., 1 1/2" x 1". |
| No. 2 Hillis & Jones 20" throat. | No. 60 Quickwork rotary. |
| No. 4 Hillis & Jones double, 48". | Schatz triple combination. |

SHAPERS.

- | | |
|------------------------|------------------------|
| 16" Worcester, b. d. | 21" Smith & Mills. |
| 16" Whipp b. g. (new). | 24" Gould & Eberhardt. |
| 20" Kelly, b. d. | 28" American gear box. |

MISCELLANEOUS.

- | | |
|--|-------------------------------------|
| Bending rolls, 12' Niles, 8 cap. | Hoists, 2-ton Yale & T. Triplex. |
| Boring bars, 4" Underwood (new). | Hydraulic forging press, 1200 tons. |
| Chain blocks, 1-ton with trolleys. | Riveter, Allen pinch type. |
| Cold saw, 60" Newton, m. d. | Sand sling for large foundry. |
| Core wire straightener, 1/2" to 5/16". | Time clocks, shop (12). |
| Gear cutter, No. 1-36" B. & S. auto. | Wheel press, 300 ton Woods. |
| Gear cutter, No. 2 Bilton. | Wheel press, 150 ton Cardwell. |
| Hammer, steam, 400 lb. Chambersb. | |

USED AND REBUILT MACHINERY

FOR SALE BY

Tinners Machinery Co.,	601 W. Monroe St., Chicago, Ill.
Brake, 8' D. & K. power, 3/16" cap.	Screw mche., No. 8 W. & S., 3" cap.
Drill, Moline hole hog, 8-spindle.	Shears, gap, Kutschied 53", 14 ga.
Hammers, 40 & 80 lb. Bradley.	Trimming press, P. & W., motor 75
Miller, univ., No. 2 B. & S.	h. p., 2 phase.
Shaper, 28" G. & E. b. g.	Welder, spot, Toledo 25 k. w.

FOR SALE BY

W. P. Little Co.,	West 9th & Front Sts., Cleveland, O.
24"x24"x5' Gray.	28"x28"x8' Gray.
50 lb. Beaudry.	POWER HAMMERS.
	75 lb. Beaudry.
	SCREW HEAD SHAVING MACHINES.
2 No. 2 Garvin screw head shaving machines, with screw feed.	BOLT CUTTERS.
4" Landis cone drive.	4" Acme rapid type.
4" capacity Columbus	SPLITTING SHEARS.
	4" capacity No. 22 Rock River.
	MISCELLANEOUS.
15 ton metal wood hydr pneu. press.	No. 60 Heald cylinder grinder.
S-24 Yoder rotary shear.	E. G-22 Ferracut geared arch pr.
2"x24" Jones & Lamson turret.	No. 13 Niagara circle shear.
150 other tools in stock.	Send us your inquiries.

FOR SALE BY

Sun Machinery Co., Inc.,	39 Hamilton St., Newark, N. J.
	BORING MILLS.
38" Bullard v. t. l., with cutting lubricant system.	72" Gisholt.
24" Bullard v. t. t., with cutting lubricant system.	110" Betts.
42" Bullard, s. p. d.	16" Niles.
53" Niles-Bement-Pond.	16"-36" Niles.
	5" Detrick & Harvey horizontal.
	6" Niles horizontal.
	RADIAL AND UPRIGHT DRILLS.
5' Baush, s. p. d.	4' Bickford universal, s. p. d.
6' Cincinnati-Bickford universal.	42" Cincinnati-Bickford, m. d.
	MILLING MACHINES.
No. 4 Cincinnati high-power, s. p. d.	No. 1 Kempsmith universal.
No. 3 Brown & Sharpe universal.	120"x96"x20 Ingersoll, 4 heads.
No. 5 Brown & Sharpe plain.	No. 4 Cincinnati vertical, s. p. d.
	LATHES.
35"x40' Johnson triple geared.	24"x12' Lodge & Shipley, q. c. g.
30"x20' Fitchburg.	18"x 8' Lodge & Shipley, q. c. g.
30"x18' H. S. G., q. c. g.	18"x 8' Monarch, q. c. g.
	PLANERS AND SHAPERS.
10'x 7'x25' D. & H. openside.	24"x24"x 6' Gray.
10'x10'x26' Betts.	16" Gould & Eberhardt shaper.
48"x48"x14' Patch.	24" Hamilton shaper.
60"x60"x20' Pond.	15" Smith & Mills shaper.
36"x36"x12' W. & P.	16" Stockbridge.
	MISCELLANEOUS.
Bending rolls, pyramid, 12'.	Punch, No. 3 Hilles & J. dbl. end.
Gear cutters, 36"-48" Brown & S.	Punch, 72" H. & J., brand new.
Grinder, No. 60 Heald cylinder.	Rotary shear, Lennox 44" thrt.
Grinder, No. 70 Heald internal.	Rotary shr., No. 6 Quickwork new.
Grinder, 14" P. & W. vert. surface.	Screw machines, automatic.
Presses, various types and sizes.	Turret lathes.
Partial list only; own or have selling rights for over 800 machines of every description. Mail us your requirements.	

USED AND REBUILT MACHINERY

FOR SALE BY

Foster Machinery Company, 10203 Quincy Ave., Cleveland, O.

12"x14 ga. Loy & Nawrath.
50"x1" Bertsch, 15" throat.

SHEARS.

Canton alligator, cap. 14' sq.
36"x18" gap, foot.

MISCELLANEOUS.

Automatic, No. 24 New Britain.
Band saw, 24" woodworking.
Drill, multiple - spindle Bausch,
No. 3 Morse taper.
Hammer, 800 lb. Billings & Spencer.
Miller, No. 00 Brown & S., hand.

Press, No. 3 Stiles.
Press, No. 6 Niagara.
Punch, EF Cleveland, 72" thrt., m.d.
Riveter, High Speed 2A.
Trolleys, I-beam, 1 & 2 ton.

FOR SALE BY

Wm. C. Johnson & Sons Machinery Co.,

1211-1223 N. 12th St.,

St. Louis, Mo.

PLANERS AND SHAPERS.

48"x48"x16' Niles, box table.
36"x36"x12' Cleveland openside.
42"x42"x12' Powell, 3 heads.
36"x36"x18' Hamilton motor drive.
30"x30"x 8' Cincinnati.

24"x24"x 6' Powell.
24" Gould & Eberhardt shaper, b. g.
24" Flather shaper, b. g.
20" Smith & Mills, shaper, b. g.
16" Steptoe shaper.

LATHES.

60" New Haven turning.
36"x16' Lodge & Shipley.
24"x10' LeBlond plain change.
20"x20' LeBlond plain change.
18"x 8' LeBlond plain change.

15"x10' Cisco quick change.
14"x 6' Seneca Falls.
12"x 5' Seneca Falls.
14"x 6' Flather quick change.

MILLERS.

36"x30"x8' Ingersoll slab.
No. 1 Rockford plain.
No. 1 Brown & Sharpe plain.
No. 7 Becker, Lincoln type.

Hendey, Lincoln type.
Miller & Crowningschild auto. fd.
No. 1 U. S. hand.

DRILLING MACHINES.

3-spindle Allen, h. s.
4-spindle Barr power feed.
3' Drees radial, (4).
4' Drees radial.

4' Cincinnati Bickford.
32" Mechanics.
22" W. F. & John Barnes.
20" Champion.

GRINDERS.

No. 1 Diamond surface.
No. 6 Besly double disc.
No. 50 Gardner disc, 30" capacity.
8" Heald rotary, magnetic chuck.

10"x72" Brown & Sharpe plain.
5"x18" Ott.
10"x18" Sterling universal.

BORING MILLS.

No. 1 P. & H. horizontal drill.
No. 3 Niles horizontal borer.
42" Niles, 2 heads.

51" Baush, 3 heads, heavy.
84" Niles, 2 heads, heavy.

SCREW AND TURRET MACHINES.

No. 1 Pratt & Whitney screw mche.
No. 6 Warner & Swasey cone head.
14" Acme hand screw machine.
2"x24" J. & L., geared head.

3"x36" J. & L., geared head.
2" Warner & Swasey hollow hex.
2" Pratt & Whitney.

SWAGERS.

No. 1 Dayton.

No. 2 Hess taper roll.

MISCELLANEOUS.

Furnaces, cyanide hardening.
Hammer, Bradley 60 lb.
Hammer, Little Giant 100 lb.
Hammer, Niles steam, 2000 lb.
Jarring machine, U. S. Molding
Machine Co.
Presses, Lourie hydraulic, 20 & 30 ton
Punch, horizontal, 1" in 1".

Punch & shear, Cleveland 42" throat.
Punch & shear, Hilles & Jones
48" throat.
Shear, 2" capacity bar.
Shear, Lennox, rotary bevel.
Slotter, 13" Niles.
Welder, butt, 200 amp.
Welder, spot, 20 k. w.

USED AND REBUILT MACHINERY

FOR SALE BY

J. Bleser Mfg. Co.,

16th & Madison Sts., Springfield, Illinois

Lathe, Niles B. 36x12, s. c. g.
Lathe, Bridgeport 26x12, s. c. g.
Lathe, Prentiss 30x16, s. c. g.
Lathe, engine, 16x8 G. & K., q. c.
Lathe, 14"x8" Monarch, q. c.

Miller, No. 2 Hendey universal.
Miller, Cincinnati, No. 3 univ., O. type.
Millers, bench, No. 3 Burke; Rockd.
Radial drill, 5' Bickford.
Shapers, Smith & Mills, 16", 12".

FOR SALE BY

Brown Machinery Co.,

2323 N. 9th St., St. Louis, Mo.

Blowers, Nos. 3, 7 and 9 Sturtevant;
Nos. 1 and 2 Root.
Buffer, Hisey 3 hp., 3-ph., 220 v.
Drills, 20" C-O and Champion; 22"
and 23" Barnes; 24" Aurora with
tapping attachment.
Drills, radial, 24" American and
C-O; 34" Fosdick.
Grinders, emery, St. Louis & W.;
large stock new at 50% disc.
Grinders, disc, No. 6 Besly and 14
Gardner.
Grinders, plain, 5x18" Ott; 10x38"
Norton; 8x36" B. & S.
Grinders, universal, Nos. 3 Ohio
and 12 B. & S.
Hammer, helve, 40 lb. Bradley.

Lathes, 14" C-J; 16" Monarch; 18"
Monarch; Lodge & Shipley; Fay
& Scott; 20" L. & S.; 24" F. & S.;
26" Whitcomb-B.; 36" American.
Lathes, No. 5A Potter & Johnston.
Millers, No. 2 Cincinnati & No. 3B
Owen, plain; No. 3 Cincinnati univ.
Planers, 30" Whitcomb; 60" Niles.
Presses, No. 5 S. & P. grd.; L. & J.
o. b. i.
Punch and shears, No. 6 L. & A.
12" thrt.; No. 17 W.-W.
Shapers, 24" Amer. b.g.; 20" D. & E.
Shears, rotary splitting, No. 134
Marshalltown 4" thrt.; 4" cap;
No. 13 Pettingell.

And many others. Write for list 130.
Full Line of P. S. & W. Sheet Metalworking Machinery.

FOR SALE BY

Randle Machinery Co.,

1733 Powers St., Cincinnati, Ohio

Bending rolls, No. 3 Cleve. 1/2"x16'.
Bending roll, No. 5 H. & J. 1/2"x10'.
Bending rolls, McCable, 5/16"x10'.
Bolt cutters, 1 1/2", 2" Acme.
Bolt cutters, 1 1/2", 2" Landis.
Bolt cutter, 4" Acme, s. s.
Boring mill, 10' Niles.
Boring mill, 12' Pond.
Boring mill, 96" Niles.
Boring mill, 72" Niles.
Boring mill, 60" Niles.
Boring mill, 42" Bullard.
Boring mill, 36" Bullard, rap. prod.
Brake, 8"x16ga. Robinson hand, pwr.
Grinder, No. 41 Besly, m. d.
Grinder, No. 24 Gardner.
Grinder, new 10x30, 48, Queen City.
Keyseater, Nos. 1 and 2 Davis.
Keyseater, Nos. 2 and 4 Mitts & M.
Lathe, 16"x 8" new American, q. c.
Lathe, 16"x 8" LeBlond, l. c.
Lathe, 19"x 8" LeBlond, q. c.
Lathe, 18"x12" L. & S., geared head.
Lathe, 21"x12" LeBlond q. c.
Lathe, 24"x12" Rahn-Larmon, q. c.
Lathe, 27"x12" LeBlond, q. c.
Lathe, 26"x12" Schumacher-B., l. c.
Lathe, 27"x18" L. & S. pat. hd., q. c.
Lathe, 27"x18" Am. grd. head, q. c.

Lathe, 30"x32" Pond, l. c.
Lathe, 25"x14" Sidney, q. c.
Lathe, 32"x18" American, q. c.
Lathe, 36"x16" Lodge & S., q. c.
Miller, No. 2 Cincinnati plain.
Miller, No. 2 LeBlond plain.
Miller, No. 2 Cincinnati universal.
Miller, No. 4 Cincinnati plain.
Miller, No. 3 LeBlond plain.
Planer, 24"x24"x 6' Gray, 1 head.
Planer, 32"x32"x16' Gray, 2 heads.
Planer, 36"x38"x16' Gray, 3 heads.
Planer, 36"x36"x10' Cleveland opens.
Planer, 48"x48"x20' D. & H. opens.
Radial drill, 24" American plain.
Radial drill, 3" Morris plain.
Radial drill, 3" American plain.
Radial, drill 4" Bickford plain.
Shaper, 14" Steptoe plain, crank.
Shaper, 16" Steptoe b. g. crank.
Shaper, 16" new Queen City b. g. cr.
Shaper, 20" & 24" Ohio b. g. crank.
Shaper, 28" G. & E. b. g. crank.
Shaper, 28" new Queen City g. b.
Squaring shear, 10 ga. x60" Bertach.
Squaring shear, 10 ga x62" Robinson.
Turret lathe, 28" & 34" Gisholt, m. d.
Wheel presses, 150, 200 and 300 ton.

Also many other tools of various sizes and types.

USED AND REBUILT MACHINERY

FOR SALE BY

Rosenfeld Machinery Co., • 942-944 W. Lake St., Chicago, Ill.

Keyseater, No. 0 Baker Bros.
 Lathe, 16x6 South Bend, q. c. g., like new.
 Milling machine, No. 2 Cincinnati universal, complete.
 Miller, Becker vertical, Model CS, rotary table.
 Motors, 1/2 h. p. to 100 h. p., a. c. and d. c.
 Press, hydraulic, Elmes 150 ton, new.
 Punch press, 1-4P style, solid back.
 Riveting hammer, High Speed 3-A, 5-A, motor driven.
 Shear, power squaring, No. 296 Niagara, 14 gauge.

FOR SALE BY

Marr-Galbreath Machinery Co.,

Air compressor, 8x8 Chicago, n.s.b.
 Air compressor, 12 cu. ft. Natl. belt.
 Bolt cutter, 1 1/2" Morgan, double hd.
 Bolt cutter, 1 1/2" Acme, triple head.
 Boring mill, 24" Bullard, side hd. m.d.
 Boring mill, 42" Bullard, 2-heads.
 Boring mill, 54" Bement-M., 2 hds.
 Boring machine, Rockford No. 2 horizontal, 38" bar.
 Channeling mach. No. 3C, K&R.
 Derrick, steel, stiff lg. 15-ton, 60' boom.
 Drill, 22" Cin. motor 3/60/220.
 Drills, 26" Barnes & Rock'd, b.g., p.f.
 Forging mach., 3" Acme, steel, m. d.
 Forging and rivet header, 1" Ajax.
 Gear and pinion cutter, No. 3 Sloan & Chace.
 Gear cutter, No. 6 Brown & Sharpe.
 Grinder, No. 18-D Rowbottom.
 Grinder, No. 24 Landis, 16" x48".
 Grinder, No. 60 Heald, 19" arm.
 Grinder, surface, No. 2 B. & S., m. d.
 Grinder, Am. d. e. 7 1/2 h.p. 3/60/220.
 Hack saw, Atkins, cap. 8"x8".
 Hack saws, No. 5 Marvel, 6"x8".
 Hack saw, 12x15" Racine, g.b., m. d.
 Hammer, 2500 lb. Chbg., s.f. steam.
 Hammer, 8000 lb. Chbg. dbl. frame.
 Hammer, 10,000 lb. Erie steam drop.
 Hammers, stm. s.f. 600, 1100, 1500 lbs.
 Hammers, 40 lb. and 80 lb. Bradley.
 Keyseater, No. 2 Davis.
 Keyway cutter, 24" Morton, cap. 2 1/2".
 Lathe 10"x6 1/2" Myers, chuck att.
 Lathe, 17"x8" Sidney q. c. g.
 Lathe, 18"x9" Lehman, q. c. g. t. a.
 Lathe, 18"x10" L. & S., q. c. g. t. a.
 Lathe, 19"x12" Sidney, q. c. g. t. a.
 Lathe, 24"x12" L. & S., chuck q.c.g.
 Lathe, 24"x14" Porter, plain change.
 Lathe, 24"x10" Putnam, taper attach.
 Lathe, 24"x21" New Haven, s. b. g.
 Lathe, 30"x16" Lodge & S., q. c. g.
 Lathe, 36"x18" Porter, s. b. g.
 Miller, vertical "C" Becker, s. p. d.
 Miller, vert. No. 4-B Becker, for m.d.
 Miller, No. 3-Bhvy. B. & S. pl.s.p.d.

58 Water St., Pittsburgh, Pa.

Miller, No. 3-B Milwaukee.
 Miller, No. 0 Kempsmith univ.
 Miller, duplex Knight, table 8 1/2"x32".
 Motor, 5 1/2 h.p. 220 v., d. var. sp.
 Motor, 10 h. p. C.-W. 3/60/220/1200.
 Mtr., 25 h.p. West. 3/60/220-440/1200.
 Motor, 7 1/2 h. p. West. 3/60/440/1200.
 Motor, 1 h. p. West. 3/60/440/1200.
 Oil separators, 1/2 & 1 1/2 bu. cap.
 Pinion cutter, No. 3 S. & C. 1"x1".
 Pipe machine, 4" Williams, m. d.
 Pipe machine, 6" Jarecki, s. p. d.
 Pipe machine, 10" E. C. & B.
 Planer, 24"x24"x6" Gray, i-head.
 Planer, 36"x36"x8" L. & D., 2-heads.
 Press, No. 1 Toledo, o. b. i. plain.
 Press, No. 32 Ferracute, punch, m.d.
 Press, No. 19 1/2 Bliss, o. b. i., a. c. motor, new.
 Punch, 30" thrt., 1"x1" m. d., s. e.
 Puuch, 17" thrt. 1"x1" A. J., m. d.
 Punch and shear, Cleveland c.f.
 "A J" for motor, 36" throat.
 Punch & shr., 12" thrt., 1 1/2"x1 1/2", A. J.
 Punch and shear, s. e. 6" thrt. 3x3.
 Punch, coping, steel plate, 13" thrt.
 36" die space, 2 holes 1"x1", m. d.
 Radial drill, 2 1/2" Fosdick, t. a.
 Radial drill, 3" Dreses-Mueller.
 Riveter, Allen, pneumatic, 24x16x10.
 Riveter, Allen jaw, 36" cap. 1 1/2".
 Riveter, 1/2" Shuster rotary, belt.
 Saw, Burke, 12" blade, capacity.
 Screw mach., 8" & 10" P & W. pl., w.f.
 Screw mch. auto, 1 1/2"x18" Cleve. "B".
 Shaper, 7" Rhodes, vise.
 Shaper, 6" Pratt & Whitney.
 Shaper, 16" Am., b. g., crank.
 Shaper, 24" Niles-Bement-Pond, cr.
 Shear, rotary, Quickwork 1/2", 36" throat, with 60" circl. attachment, motor, 3 ph., 60 cy. 220 v.
 Shear, rotary, 12" thrt., cap. 22 ga.
 Turret lathe, 13" Gisholt, 21" h. s.
 Turret lathe, 28" Gisholt, 21" h.s., t.a.
 Turret lathe, 2"x24" J. & L., s. p. d.
 Turret lathe, 18" W. & S. friction hd.

WOODWORKING MACHINES.

Cut-off saw, sw., F. & E. No. 75, m. d.
 Lathe, F. & E. No. 35 auto bk. kf. ga.

Saw filer, band, Wardwell, "K" m. d.

USED AND REBUILT MACHINERY

FOR SALE BY

Mid-West Machine Tool & Supply Co.,

Davenport, Iowa

Automatics, full, No. 2, No. 0 and
No. 00 Brown & Sharpe.
Drills, 4-spdl., 12" and 14" L. & G.
Drills, 6-spindle Allen, h. s.
Gear cutter, 4" Waltham, (new).

Grinders, surface, No. 22, Heald.
Hobber, Nos. 3, 12-B & C, 4 Adams.
Miller, No. 13-B H. & S., production.
Miller, No. 6Y Brown & Sharpe.
Radial, 4" American sensitive.

Partial list; send us your inquiries.

FOR SALE BY

B. L. Saltzman,

524 W. Van Buren St., Chicago, Ill.

MILLING MACHINES.

Becker No. 25.
No. 5 LeBlond.

Hand milling machines.
No. 5 Cincinnati.

GRINDERS.

No. 60 Heald cylinder grinder.
Taylor & Fenn.

Bench and floor type grinder.

LATHES.

16x10 Lodge & Shipley.
24x10 Boye & Emmes.

16x7 Chard.
15x6 Van Dyke.

PUNCH PRESSES.

Rockford No. 1.

No. 24 Bliss Stiles.

Motors and generators of all descriptions.

1/2 h. p. General Electric sgl. phase, 60 cycle, 110-220 volt, 1750 r.p.m., new, \$30.

Note: We carry a full line of new and used Pulleys, Belting and Hangers.

FOR SALE BY

McDonald Machinery Co.,

1531-33 N. Broadway, St. Louis, Mo.

Arbor presses, Eames No. 6.
Baling presses, Champion sheet met.
Bolt threader, Acme 3 hds. 1 1/2" cap.
Chain hoists, Yale & Towne 1 1/2 & 2-ton
Demagnetizer, Walker.
Drill, Bausch 18-spindle.
Drills, Baker.
Drills, Leland-G 1-sp. h.s., b.b. floor.
Drills, H. & W., Kokomo 1-spdl.,
Sipp 1 & 2-spdl., h. s., b. b.
Drills, 20", 24", 26" & 28" b. g., & tap.
Filing machine, Rearwin, floor type.
Furnace, Holcroft 92 k.w. annealing.
Gear cutter, No. 3 B. & S., 26".
Grinder, Heald No. 60 cylinder.
Grinders, Ott 5x18"; modern inte.;
LaSalle No. 2 surf.; B. & S. No. 2
surface.

Hack saws, 4x4, 6x6 & 2 Racine Jrs;
Atkins 4x4"; Racine 6x6"; Atkins
8x8 h. s., Marvel No. 2.

Keyseater, Davis No. 2.

Lathes, Schumacher & Boye, 42"x16"
q. c. g.; South Bend 24"x14"; South
Bend 21"x12" q. c. g.; Davis 22"x10";
Lehmann 25"x9" q. c. g.; LeBlond
19"x8" q. c. g.; American 20"x9";
Monarch 16"x8", Monarch 18"x8",
all q.c.g.; Monarch 11"x6" mtr. dr.
q. c. g. tool room lathe complete
40 other assorted sizes.

Milling machines, Kemp Smith No. 2;
Ohio No. 20 plain; Becker "SD"

vertical, rotary table, 17200 lbs.;
American No. 1 1/2 universal; B. & S.
No. 3 vert., s.p.d., with rotary tbl.;
Ohio 34; LeBlond No. 3-H plain;
Brown & S. No. 3 pl.; Becker No.
4-B vert; B. & S. No. 3-B plain,
s. p. d.; Kemp Smith No. 3 univ-
ersal; No. 1 Kemp Smith plain.
Pipe machine, Oster 2", Curtis 3",
motor dr; Merrill 4" belt drive;
B. & K. 8".

Planer, Gray 28"x28"x6", 1 head.
Punches, Wetterhahn 18", throat 1 1/2"
in 1 1/2"; W. & W. No. 17 punch and s.
Punch presses, Swaine No. 29 o. b. i.
Willard No. 4-A o. b. i., Bliss No.
19 o. b. i., (2), Federal No. 1 & 2.
Pyrometer, Thwing elec., with rec.
Screw machine, Gridley 1-spdl. 24"
auto.; Cleveland 1 1/2" auto.; P. & W.
No. 2 1/2 hand; Foster No. 3 hand;
Woods No. 2 tilted turret head;
Bardons & O. No. 7; National-A.
No. 52 auto., 4-sp., m. d. B. & S.
No. 00 automatic.

Shapers, Whipp 16" and 20"; Cincinnati
20", b. g.; Ohio 20"; Ohio 16";
American 16" b. g.; S. M. 16";
Steptoe 14" Barker 24" b. g.;
American 24" b. g.; Queen City
24" b. g.; Barker 18" b. g.
Shears, 60" thrt. rotary slitting, (3).
Welders, butt, Federal, 1/2" rds.

USED AND REBUILT MACHINERY

FOR SALE BY

Fitchburg Grinding Machine Corporation, Fitchburg, Mass.

LATHES.

LeBlond 14"x8'.
Reed-Prentice 16"x8'.
Putnam 14"x6'.

Greaves-Klusman 18"x8'.
Perkins threading 21"x10'.
New Haven 32"x12'.

PLANERS.

42"x36"x22' Whitcomb.
32"x26"x16' Whitcomb, 2 heads.
22"x22"x6' Whitcomb.

17"x20"x8' Whitcomb.
30"x30"x8' Powell, 2 heads.

TURRET LATHES.

24"x24" J. & L., bar equipment.
24"x24" J. & L., bar equipment.
3x36" J. & L., chuck equipment,
double spindle.

24"x26" Greenlee.
16" Reed Prentice.
21" Gisholt.

MILLERS.

No. 1 Steptoe.

BORING MILLS.

3"x24" Rockford.

24" Reed-Prentice.

RADIAL DRILL.

24" Dreses.

FOR SALE BY

Norton-Broadway Mch. Co., Sixth & Baymiller Sts., Cincinnati, O.

Good Machine Tool Bargains.

BORING MILLS.

36" Niles, 2 heads.
42" Bullard, 2 heads.
52" Bickford, 1 head.
4" Lucas horizontal.

36" American, 2 heads.
48" Niles, 2 heads.
6" Niles, 2 heads.
34" Rochester horizontal.

LATHES.

25"x12' LeBlond q. c. g.
27"x16' Lodge & Shipley.

20"x16' Bradford 4 step.
42"x24' Bradford triple gear.

MILLING MACHINES.

2B Brown & Sharpe, heavy.
No. 2 B. & S. universal.
No. 3 Brown & Sharpe vertical.

No. 4 Brown & Sharpe universal.
No. 4 Cincinnati, universal (2).
No. 3 LeBlond plain.

GEAR CUTTERS AND HOBBERS.

No. 3-26" Brown & Sharpe.
No. 12-B. & S., spur and bevel.
13" Schuchardt & Schutte hobber.

No. 4-36" Brown & Sharpe.
18" Gould & Eberhardt hobber.
No. 12 Barber-Colman.

PRESSES AND SHEARS.

No. 3 Toledo inclinable.
No. 183 Stiles Parker inclinable.
No. 68 N Bliss, double acting.
50" Bertsch power shear.

No. 4 Toledo.
No. 30 L. & A. incl.
No. 1 Long & A. punch and shear.
6' Bertsch shear.

4'-6' and 8' Robinson square shears.

GRINDERS.

18"x96" Norton cylindrical.
6"x32" Brown & Sharpe cylindrical.
6"x20" Webster & Perks.
Bath and Walker surface grinders.

16"x72" Brown & Sharpe cylindrical.
14" Pratt & Whitney vertical.
No. 60 Heald cylinder (2).

PLANERS.

24"x6' Gray, 1 head.
38"x38"x16' Gray, 2 heads.

24"x24"x8' Pond, 2 heads.
38"x38"x16' Gray, 2 heads.

SHAPERS.

15" Ohio plain, crank.
16" Queen City, b. g. crank.
25" Smith & Mills, b. g. crank.

16" Cincinnati, b. g. crank.
24" Queen City, b. g. single pulley.
20" Smith & Mills, b. g. sgl. pulley.

MISCELLANEOUS.

Automatic, 24" Gridley 4-spindle.
Automatic, 14" Gridley 4-spindle.
Drill, 3" Morris radial gear box.

Drill, 4' Bickford radial gear box.
Pipe machine, Curtis 24" to 12".

Send for stock list.

USED AND REBUILT MACHINERY

FOR SALE BY

Nelson Machinery Co.,

123 N. Pearl St., Green Bay, Wis.

Compressors, 3 Gardner Rix 6x6 vertical duplex.

Drill, Barker 25", sliding head, new.

Drill, 3' Hilbert radial.

Boilers, Engines, Transmission, Woodworking Equipment.

Lathe, Gardner No. 4 polishing, b.b.

Miller, No. 3 Cincinnati universal.

Punch & shear, single, W-W. No. 14.

Tanks, 60x18' pressure storage (2).

FOR SALE BY

United Mchry. & Supply Co.,

4640 Newberry St., St. Louis, Mo.

Bulldozer, Williams & White No. 26

Grinder, No. 3 B. & S. univ. cutter and reamer.

Miller, No. 1 Kemp. universal, pulley drive.

Miller, No. 1 1/2 American, q. c. feeds.

Punch, 30" throat, 3x3.

Rolls, 9', a. c. motor driven.

Rolls, Power corrugating, 45".

Shaper, 20" American, used 6 mos.

Shear, 6' x 1/2" capacity, heavy duty.

Shear, 42" Niagara power.

FOR SALE BY

The Reeve-Fritts Co., 558-560 W. Washington Blvd., Chicago, Ill.

Bench lathe, No. 4 Elgin with bench.

Centering machine, 4" Whiton.

Die filer, No. 3 Barry, floor type.

Drill, 2 1/2" C. & O. plain, radial.

Grinder, No. 3 Oakley, surface.

Grinder, No. 183 Wells, cutter & tool.

Grinder, 5' x 19" Ott plain.

Lathe, 9' x 12" Sundstrand prod.

Lathe, 11' x 8' Star, c. r.

Miller, No. 2 1/2 universal.

Miller, No. 3 Oesterlein plain.

Miller, No. 4 Fox plain.

Miller, No. 2 Rockford, plain.

Miller, No. 2 Ohio universal.

Pipe machine, 6" Merrill, belt drive.

Planer 34" x 24" x 16" Cincinnati.

Planer, 24" x 24" x 6' Rockford.

Press, No. 1 Cons., o. b. i.

Press, No. 1 1/2 Cons., o. b. i.

Press, No. 2 V. & O., o. b. i.

Press, No. 100 1/2 Waterbury, bench.

Press, No. 3-P Am. Can solid bk.

Press, No. 3 Bliss solid back.

Press, No. 3 Hoeft o. b. i.

Rivet spinner No. 83 Grant dbl. sp.

Screw mche., No. 1 Foster 13/16" cap.

Screw mch., No. 2 Foster, frict. hd.

Shaper, 16" Steptoe crank.

Shaper, 16" Queen City b. g., crank.

Shaper, 20" Steptoe crank.

Shop saw, 6x6 Racine h. a.

Shop saw, 6x6 Peerless h. a.

FOR SALE BY

The O'Brien Machinery Co.,

113 N. Third St., Philadelphia, Pa.

Boring mill, No. 1 1/2 Beaman Smith horizontal, floor type, 3 1/2" bar.

Die sinker, No. 2 Pratt & Whitney.

Die sinker, No. 3 Pratt & Whitney.

Die sinker, No. 4 Pratt & Whitney.

Drill, 32" Aurora, motor driven.

Drill, radial, 6" Dresses full universal.

Grinder, 14" x 36" Norton plain, belt.

Hammer, 2000 lbs. Chambersburg,

double frame, steam forging.

Hammer, 6000 lb. Chambersburg,

steam drop, used.

Lathe, 16"-18 1/2" x 9" Lehmann, q. c. g.,

belt driven.

Lathe, 30" x 26" Lodge & Shipley, belt,

q. c. g.

Lathe, 27" x 10" LeBlond, tur. attach.

Lathe, 30" x 30" Harrington.

Lathe, 36" x 20" Sidney, q. c. g.

Lathe, 46"-48" x 14" McCabe dbl. sp.

Miller, No. 2-B Rockford universal,

Miller, No. 1 1/2 Kearney & Trecker universal.

table 38" x 30", q. c. g. and equip.

Milling mche., No. 3 Garvin duplex.

Pipe machines, 2", 4", 6", 8" & 12"

Oster, Cox, Williams, Eaton-Cole

& Burnham and Jarecki makes,

belt or motor driven, comp. stock.

Planer, 36" x 36" x 24", Bement, 4 hds.

Press, No. 73 1/2 Bliss trimming press.

Press, Chambersburg trimming, mtr.

drive, weight 12000 lbs.

Press, No. 37 Niagara, 1100 lb. fly-

wheel, solid back.

Rolls, 6' of 1 1/2" Beloit drop end.

Shaper, 20" Bement Niles, heavy

duty, traveling head, one head.

Shapers, 16", 20" & 24" Gould & E.

Shapers, 20" Stockbridge, with speed

box, (2).

Shear, Buffalo bar, cap. 2" round.

USED AND REBUILT MACHINERY

FOR SALE BY

J. P. Rentschler & Co., 605 W. Washington Blvd., Chicago, Ill.

Milling machine, No. 6 Pratt & Whitney hand miller (2).
Milling machine, No. 3 Becker vertical with rotary table (2).
Motors, new, $\frac{1}{2}$ h. p., a. c., 1750 r. p. m., \$0.25 each.
Presses, all sizes of open back inclinables.
Presses, No. S-51 and SRG-102 Ferracute, double crank.
Presses, No. 39 Bliss and No. 24 Michigan horn presses.
Press, No. 4 K. & K. arch type, stroke $2\frac{1}{2}$ " wgt. 5300 lbs.
Many other presses and machine tools at lowest prices.

FOR SALE BY

Allegheny Gear Co., 1013 Empire Bldg., Pittsburgh, Pa.

Broaching mch., No. 3 LaPointe.
keyways to 1 1/2", squares to 3".
Drill, 2-D Colburn, 24" swing 2 1/2".
Drill, radial, Reed-Prentice, arm 5' traverse 34", No. 5 taper.
Gear cutter, No. 3A Cincinnati, 36" diameter, 10" face.
Gear shapers, "Fellows" No. 62, spur 35" d., 5" f., internal 25" d., 3" f.
Gear generators bevel, Gleason, both 11" and 15" straight tooth.
Grinder, No. 20 Bryant, deep hole chucking, range 12", swing 12 3/4".
Grinder, Landis 12"x66" plain whls., 18" dia., 1 1/2 and 2 1/2" face.
Hoists, portable, crane, 2-ton.
Lathe, 32"x14" Bridgeford, direct mtr. drive, geared head, taper attach.
Miller No. 4 B. & S. universal complete, dividing head, vert. att.
Planer, Bick-it 36"x36"x12", heavy duty, direct con. with 15 h. p. mtr.

FOR SALE BY

Reliance Machinery Sales Company

1405 Brighton Road, N. S. Pittsburgh, Pa.

Automatics, Nos. 52 & 55 Acme.
Blower, No. 5 Champion, 64" outlet.
Blower, Amer. pressure, 461 cu. ft.
Bolt cutter, 4" Acme, class "A", 3-sp.
Bolt cutter, 1 1/2" Acme, double head.
Bolt cutter, 2 1/2" Acme, single head.
Boring mill, No. 44 D. & H., floor type, 3 1/2" bar.
Boring mill, Niles horiz., 4 1/2" bar.
Boring mill, 42" Bullard, 2 heads.
Boring mill, 46" Bullard, 2 heads.
Bulldozer, No. 4 Williams & White.
Brake, 48" Keane, capacity 1/2".
Broach, No. 3 LaPointe.
Buffers, 10 h. p. 220-3-60, 3600 r.p.m.
Car wheel borer, 42" Ridgeway.
Cutting-off machine, 6" Hurlburt-R.
Drills, 26" Barnes, sliding head.
Drills, 36" Snyder, sliding head.
Gear cutter, 36"x10" G. & E., s. p. d.
Gear cutter, No. 13 Brown & Sharpe.
Grinder, 5 h. p. U. S. 220-3-60.
Grinder, Oliver drill, 1/2" cap., m. d.
Grinders, Nos. 11 & 12 B. & S. pl.
Grinder, 12"x24" Modern plain.
Grinder, No. 16 Besly, double disc.
Hammer, 80 lb. Bradley cush. helve.
Hammer, 300 lb. Bradley upright.
Lathe, 12"x 6" Seneca Falls, q. c. g.
Lathe, 12"x10" Davis tool rm., q. c. g.
Lathe, 14"—28" Fay & Scott gap.
Lathe, 18"x10" W.-B., g. h., s. p. d.
Lathe, 20"x16" Hendey, g. h., m. d.
Lathe, 24"x12" Boye & Emmes, q. c. g.
Lathe, 30"x12" Boye & Emmes, q. c. g.
Miller, No. 3 Kempsmith plain, v. a.
Miller, No. 4 Hendey plain, s. p. d.
Miller, No. 4 Brown & Sharpe univ.
Miller, No. 5 Cincinnati pl., s. p. d.
Miller, Gooley & Edl Briggs type.
Pipe machine, 1/2" to 2" Williams.
Pipe mche., Jarecki 1 1/2" to 6", m. d.
Pipe mche., E., C. & B. 2 1/2" to 8".
Pipe machine, Merrill, 2 1/2" to 12".
Press, No. 18 Bliss o.b.i., 3" stroke.
Press, No. 3 Adriance o.b.i., 3 1/2" str.
Press, 30-ton Lucas forcing.
Press, Ferracute DD2, o. b. i., cam.
Press, No. 16 Bliss horning.
Press, No. 54 Toledo trimming.
Planer, 30"x36"x12" Gray, 1 head.
Planer, 36"x36"x12" Gray, rev. m. d.
Planer, 48"x48"x12" Betts, 3 heads.
Punch, Wickes, 48" thrt., cap. 1 1/2"x1".
Radial drill, 4" Mueller plain. (2).
Radial drill, 6" Bickford plain g. b.
Saws, No. 5 Marvel high spd., 6x6, (2).
Saw, band, 36" American.
Saw, cold, 14" Cochrane & Bly.
Saw, American metal swing, m. d.
Separator, Dings magnetic, m. d.
Shaper, 24" Cincinnati, b. g. crank.
Slotter, 15"—18" Dill, m. d.
Tapper, 1/2" Webster & Perks, 1-spdl.
Tapper, 1 1/2" Webster & Perks, 2-spdl.
Thread roller, No. 119 Bliss.

Our warehouse is full of bargains. What have you for sale?

USED AND REBUILT MACHINERY

FOR SALE BY

Taylor-Hall Welding Corporation, 3 May St., Worcester, Mass.

BUTT AND SPOT WELDERS

Guaranteed to be in perfect condition.

Thomson 20-A-10 butt welder.

Thomson 10-A-7 butt welder.

Thomson 3-A butt welder.

Thomson 2C butt welder.

Thomson 2-A butt welder.

Thomson 25 automatic butt welder.

Thomson 40-A vert. butt welder.

Thomson 20-A vert. butt welder.

Thomson 10-A vert. butt welder.

FOR SALE BY

Miles Machinery Co.,

Automatics, 5A & 6A Potter & J.

Bulldozer, No. 4 Williams & White.

Compressor, 10"x10" Chicago n. s. b.

Drill, radial, 3 1/2" American.

Drill, radial, 6" Dreses.

Gear hobbers, Nos. 3 & 12 Barber-C.

Grinder, surf., No. 1 Diamond.

Grinder, tool & cutter, No. 2 Norton.

Grinder, cyl., 10x36 & 12x36 Landis.

Grinders, internal, Nos. 70 & 75 Heald.

Grinder, face, 30"x84" Diamond.

Grinder, crank, 16"x48" Landis.

Hammer, No. 2B Nazel, air.

Saginaw, W. S., Mich.

Keyseaters, Nos. 9, 4 & 6A M. & M. Mill, boring, 48" Bullard.

Mills, horiz., No. 3A & 3 1/2 universal.

Millers, plain Nos. 2, 3, 5 Cincinnati.

Millers, univ., Nos. 2 & 3 B. & S.

Millers, vert. Nos. 5C & 6 Becker.

Miller, automatic 18" Cincinnati.

Planer, openside, 30"x12" Cleveland.

Planer, 48"x48"x12" Pond.

Presses, Nos. 65 & 66 Consolidated.

Press, No. 4 Walsh o. b. i.

Shaper, 25" Springfield.

Shear, 4" Kling splitting.

FOR SALE BY

Carlson Machinery Co., Inc.,

Boring mill, No. 2 Rockford horiz.

Boring mill, No. 3-A universal hor.

Centering machine, 4" Pratt & W.

Drill, 36" New Haven sl. hd.

Drill, 4" Sipp h. s. b. b., 8" overhang.

Grinder, 10x20 Landis plain.

Grinder, 10x20 Landis universal.

Grinder, No. 2 Oakley univ., t. & c.

Hobber, No. 12 Barber-Colman.

Hobber, 24" Schuchardt & Schutte.

Lathe, 13"x5" Sheppard.

Lathe, 16"x8" Carroll-Jamieson.

Lathe, 18"x6" Lodge & Shipley.

Miller, No. 2 Hendey Lincoln type.

Davenport, Iowa

Miller, No. 1 1/2 Cincinnati univ.

Miller, No. 2-B Brown & S. pl.

Miller, No. 34 Ohio pl. div. hd.

Press, No. 4 Toledo o. b. i.

Press, No. 5 Toledo o. b. i.

Press, No. 29 Swaine o. b. i.

Riveter, 1/2" Cincinnati spinning.

Shaper, 16" Smith & Mills.

Shaper, 20" Smith & Mills.

Shaper, 20" Cincinnati.

Turret lathe No. 1 Pratt & W.

Turret lathe, No. 4 W. & S. pl.

Turret lathe, No. 6 Warner & S., p. f. to crge. and turret.

FOR SALE BY

A. M. Stoehr Machinery Co., 418 Mid-City Bank Bldg., Chicago, Ill.

Bolt cutter, 3-spld. Acme, 1" cap.

Boring mill, Lucas horizontal, 3" bar,

single pulley drive; 60" Bullard

motor drive, 220 v., 60 cy., 3 ph.

Bulldozer 75-ton Lorie hyd., m. d.

Grinders, No. 7 Gardner b. b., d. e.,

univ. tbl; Nos. 26-18" Besly dbl.

spdl. disc, complete; Detroit center-

less, arranged for belt drive.

Hammer, 800 lb. Erie, drop board.

Miller, 70"x22" Sellers planer type,

5 heads, heavy duty.

Planers, 56x56x12" Gray, 2 heads;

60x60x18" Gray, 2 heads.

Presses & pumps, hydraulic, 300 ton

Perrin, 2-15 ton, comp. with pumps,

Presses, Bliss, arch., 2" str., 28" bet.

column; R. & K. dbl. ck., 36" bet.

column, roller feed, 2 1/2" stroke;

No. 161 Toledo knuckle joint.

Punch and shears, No. 8 Whiting,

36" thrt., arct. jaw, motor drive.

Riveters, 3-A, 4-A & 5-A, high spd.

Rolls, 42" Int. type bending, 1/2" cap.;

8" Pyramid type, 1/2" cap.; 12" bend-

ing, (not drop end) cap. 1 1/2".

Shears, alligator, D. & K., all steel;

Bliss rotary, 12 gauge.

USED AND REBUILT MACHINERY

FOR SALE BY

Delaware Machine Co., . . . 1058 W. Harrison St., Chicago

RADIAL DRILL.

Dresses 3' radial drill press, with a 29" round table, complete.

ENGINE LATHE.

Schumacher & Boye 22"x12" screw cutting engine lathe, complete.

FOR SALE BY

McMullen Machinery Company,

Grand Rapids, Mich.

Automatics, 4" Cleveland, (2).
Cold Saw, No. 4 Greenfield.
Drill, 20" Wisconsin all geared.
Furnace, No. 200 Stewart, Crucible.
Grinder, No. 6-A Bryant.
Grinder, Wisconsin universal.

Lathe, 24"x26" Greenlee flat turret.
Pipe machine, 6" Merrill.
Press, No. 3 Manville AA.
Press, No. 54 Consolidated geared.
Press, No. 7 Consolidated geared.
Welders, No. 7-C Thomson, butt.

FOR SALE BY

Taylor Mfg. Co., Inc.,

35 Albany St., Cambridge, Mass.

Automatic, Cleveland 24", 5 hole turret	\$ 125.
Grinders, centerless, Sanford (2), each	1250.
Grinder, cylinder, No. 60 Heald, No. 344	350.
Grinder, cylinder, No. 60 Heald, No. 349	350.
Grinder, No. 75 Heald	100.
Grinder, Norton 6x32	400.
Grinder, Landis 6x18, No. 11466	450.
Grinder, small tool	45.
Saw table, 27 1/2"x33", t. & l. pulleys, mitre cutting attachment	60.

FOR SALE BY

John Ramming Machine Co., First St. & Clark Ave., St. Louis, Mo.

Boring mill, 60" Colburn, 2 heads.
Boring mill, 42" Detrick & Harvey,
1 standard and 1 turret head.
Drill, No. 513 Baker, 5" capacity.
Drilling and boring machine, Barnes
with 24" dia. worm geared rotary
table.
Gear shapers, 2-36" Fellows.
Lathe, 16"x8" Prentice, q. c. g.

Lathe, 20"x8" Lodge & Shipley,
q. c. g.
Lathe, 18"x8" Schumacher, Boye &
Emmes, q. c. g.
Lathe, 15"x6"-8" LeBlond, q. c. g.
Lathe, 14"x6" Prentice, q. c. g. taper
attachment.
Miller, No. 4 Cincinnati plain.
Miller, No. 2 Cincinnati plain.

Air compressors, boilers, engines, generators, pumps, etc.

Write for complete list.

FOR SALE BY

Bennett Machinery Co.,

30 Church St., New York City

Boring mill, 90" Betts, m. d.
Boring machine, 4" Betts, knee type.
Boring mch. 28" Fitch, knee type.
Lathe, 26/48"x18" McCabe, dbl. sp.
Lathe, 26/48"x14" McCabe, dbl. sp.
Lathe, 24"x12" S. & B.
Lathe, 24/33"x14" Pond 450.
Lathe, 26"x14" Rahn-Carpenter.
Lathe, 24"x12" L. & S., q. c. g., cone.
Lathe, 20"x15" Reed, 11" centers.
Lathe, 20"x8" Whitcomb-B., q. c. g.
Lathe, 16"x10" Flather, q. c.

Lathes, 16"x8" Davis 350.
Miller, vert. 42"x14" No. 5B Becker.
Miller, No. 3 Kempsmith plain.
Miller, No. 1-A Milwaukee mfg., pl.
Miller, No. 2 LeBlond, plain, cone.
Pipe mch., 8" Saund., m. d. 4 yrs. old.
Pipe machine, 8" E. C. & B., belt.
Pipe machine, 8" Jarecki, motor.
Pipe machine, 4" E. C. & B., belt.
Planer, 30"x30"x10" Cincinnati, 2hds.
Radial drill, 34" Mueller, g. b. tap.
Radial drill, sens., 3" American, tap.

USED AND REBUILT MACHINERY

FOR SALE BY

Lee Machinery Company

3171 Bellevue Ave.,

Detroit, Michigan

Grinder, 12" Heald rotary.
Lathe, 15"x6" South Bend, standard change gear with chuck.
Lathe, 18"x8" Springfield, quick change.
Mill, No. 1 U. S. hand.
Mill, No. 6 Whitney hand.
Screw machine, No. 4 Foster universal.
Screw machine, No. 4 B. & O., with power feed.

FOR SALE BY

E. L. Klauber Machinery Co.,

320 South Third St., St. Louis, Mo.

Drill, radial, 42" Bickford.
Drill, multiple, 10-spindle Gardam.
Drills, 3-spindle Dwight slate.
Furnaces, American hardening.
Gear cutter, 32" Whiton.
Gear miller, automatic, 4" cap.
Lathe, bench, Stark, with collets.
Lathes, 12" to 26".
Lathes, 9x14 Porter-Cable.
Lathes, 13x4 Adams short cut.

Millers, hand, No. 6 Burke.
Pinion and wheel cutter, Stark.
Planer, 30"x30"x5" American.
Rivet spinners, Grant, (4).
Screw mche., No. 6 B. & S., semi-auto.
Screw machine, Greenfield 1" cap.
Shapers, 14" Rockford.
Shear, serpentine, Lenox 4".
Tapping machine, No. 6 St. Louis.
Turret lathe, No. 3 Bridgeport.

FOR SALE BY

Fitzsimmons & Cole Machinery Company

1208 House Building,

Pittsburgh, Pa.

Air compressor, 8x8" Bury, 125 ft.
Bolt cutters, 1 1/2", 2", 2 1/2", 4" Landis.
Bolt cutter, 2" National dbl. hd. m. d.
Boring mills, 36" to 16".
Bulldozer, No. 27 W. & W.
Drills, 14" to 38".
Drill, mult., No. 5 Fox, 10-spindle.
Drill, radial, 4" Dreses, m. d.
Drill, radial, 6" Prentice, s. p. d.
Flanger, McCabe, 1" capacity.
Gear cutters, spur and bevel.
Gear cutter, spur, No. 6 B. & S.
Gear hobber, 96" Gould & E.
Gear planer, 24" Gleason, bevel, b. d.
Grinder, No. 1 Landis, 10"x20" univ.
Grinder, 12"x96" Norton, b. d.
Grinder, disc, No. 53 Besly.
Grinder, No. 16 Blanchard.
Hammer, 100 lb. Bradley, upright.
Hammer, 200 lb. Beaudry, upright.
Hammers, 2-B, 3-B & 4-B Nazel.
Hammers, steam 600 lb. to 3000 lb.
Hammers, board drop, 1000 lb.
Keyseater, No. 2 Mitts & Merrill.
Lathes, 12" to 60".
Lathe, 18"x10" American, grd. head.
Lathe, 48"x20" Bridgeford, grd. hd.
Lathe, turret, 28" Libby.
Miller, plain., No. 6 Brown & S.
Miller, univ. No. 3 Brown & S.
Miller, slab, 24x20x14" Ingersoll.
Pipe machines, 5 1/2" to 12".
Planer, 36"x36"x16" N-B.-P. like new.
Planer, 48"x42"x12" Cincinnati, 2 hds.

Planer, 96"x96"x20" Pond, 4 hds., m. d.
Planer, o. s. 42"x42"x12" Detrick & H.
Planer, rotary, 48" Cleveland.
Press, geared, No. 34 Toledo.
Press, No. 37 1/2 Bliss, s. s., 6" stroke.
Press, toggle, No. 14 Bliss.
Press, wheel, 300 & 400-t. Caldwell.
Punch, hor., Cleveland, 1" thru 1".
Punch & s. 30" thr., L. & A. 1 1/2" thru 1".
Punch & s. Clev. 36" arch jaw 1 1/2-1".
Riveter, Hanna, 18" thrt., 15" gap.
Riveter, 24" reach, 30-ton.
Riveter, stake, No. 6 Whiting, 48" thrt.
Rolling mill, 6"x10" Standard.
Rolls, angle bending, 3"x3" Buffalo.
Rolls, bending, 10"x1" Ryerson.
Saw, cold, 24" Espen-Lucas.
Saw, hack, No. 7 Atkins, 8"x8".
Shaper, 24" Cincinnati.
Shear, angle, 6"x6"x4" L. & A.
Shear, alligator, Lewis 1 1/2" square.
Shear, alligator, United, 8"x8".
Shear, bevel, Lennox 1".
Shear, guil. No. 0 H. & J., 1 1/2" round.
Shear, rot., No. 1108 Bliss, 3/16" cap.
Shear, rotary, No. 3 Quickwork 1".
Shear, rotary, No. 6 Quickwork 1".
Shear, 10"x3/16" W. & R., m. d.
Shear, squar., 30"x18 ga. Toledo, b. d.
Straightener, bar, No. 4 D. K. & R.
Straightener, beam, No. 4 H. & J.
Swaging machine, 3" Etna.
Testing machine, 100,000 lbs.
Upsetters, 1 1/2" to 5".

Extra Big Savings—on these “High Grade” Machine Tools—

**If the Tool you have been looking
for is on this List—**

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300 Ton Caldwell Wheel Press.

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26/48" McCabe Double Spindle Lathe.

26/44"x16' McCabe Double Spindle Lathe.

2½' Gang Radial Drill.

36" Bullard Boring Mill.

18", 26", 30" & 36" Lathes, “Latest Types”.

48" Niles Lathe with 60" raising blocks.

3" bar Horizontal Boring Mill.

84"x30' Planer and 48"x26" Planers.

No. 3 Hendey-Norton Milling Machine.

42" Bullard Boring Mill.

**Gear Cutters, Shapers, Drilling Machines,
Grinders, Bending Rolls, Punches, etc.**

We can show this equipment in actual operation

J. J. McCabe Lathe & Machinery Corp.
149 Broadway, NEW YORK

NEW 3 PHASE MOTORS CHEAP. 3 H. P. \$54.50; 5 H. P. \$65.50

LATHES

12"x 8' Cleveland, geared head.
14"x 6' Carroll-Jamieson, new, q. c.
14"x 6' Hamilton, grd. hd., motor dr.
14"x 6' Monarch, quick change.
14"x 6' Sebastian, grd. hd., m. d.
14"x 8' Sidney, double back geared.
14"x 6' Hamilton, style B.
19"x10' American, quick change.

19"x10' LeBlond extra heavy duty.
20"x 8' American, geared head.
20"x10' Hamilton, rapid production.
20"x10' Prentice, taper attachment.
22"x8 1/2" Greaves & Klusman.
24"x12' Bradford.
24"x24' Prentice, with raising block.
34"x60" & 34"x60" Fitchburg, Lo-Swing

TURRET LATHES and SCREW MACHINES

Acme 1/2" cap., wire feed column.
No. 4 Dehance, 1 1/2" capacity.
1 1/2" capacity Smurr & Kamen.
1 1/2" Milholland.
2x24 and 3x36 J. & L.

No. 1 Foster, 15/16" capacity, (2).
Warner & Swasey No. 2.
No. 52 National Acme.
1 1/2" 4-spindle Gridley.

SHAPERS

14" Niles, traveling head.
14" Steptoe, crank.
16" American tool room.

16" O. & S., b. grd., new, low price.
24" O. & S. back geared crank.
16" Steptoe, b. g.

PRESSES

No. 10 and No. 15 Excelsior, foot.
No. 6-1 Cleveland, o. b. i.
Nos. 3-A & 5-A Willard inclinable.

Nos. 1, 1 1/2, 2, 2 1/2 Robinson, new.
Emco, bench, for radio parts.
No. 2 1/2 Toledo, o. b. i.

DRILLS and RADIALS

No. 1 Baush multiple.
Electric Drills, Black & Decker.
No. 4 Duntley electric.
22", 24", 26", 28" and 32", sliding hd.
32" Hoefer, sliding head.

6" Ceiling drill.
25" Kokomo high speed.
4-spindle Reed sensitive.
44" Stover.
Hole Hog, No. 66-D, 7-spindle.

MILLING MACHINES

No. 1 Kempsmith universal, new.
No. 2 Kempsmith plain.
No. 3 Kempsmith plain, new.
No. 5-C Becker, vertical.
No. 25 Bilton.

No. 25 Becker plain, power feed.
No. 2 H Brown & Sharpe plain.
Oesterlein 24x7x18 plain.
Briggs "A" high duty, 24x8" table.
No. 7 Becker, Lincoln type.

GRINDERS

Nos. 1 & 78 W. & M. surface.
6"x15" Fitchburg plain.
12"x36" Cincinnati universal.
16"x42" Landis universal.
36" and 66" Yates plate.

No. 60 Heald cylinder.
Schmitt cylinder grinder.
J B X, W. & M. tool and cutter.
No. 10 Besly 18" double disc.
No. 20 Bryant, chucking.

MISCELLANEOUS

Band saw, Clark, compound.
Band saw, Napier 10"x10".
Blower, No. 6 Piqua, pressure.
Blower, positive pressure, Leiman.
Boring mill, Colburn No. 3, tur. hd.
Boring mill, Sellers 50" car wheel.
Boring mill, 72" column.
Boring mill, vertical, two heads.
Broaching mchs., 1 and 3 LaPointe.
Compressors, 6x8, 8x8 and 9x8.
Gear cutter, No. 3-26 B. & S.
Gear miller, Bilton No. 1.
Hammer, 150 lb. Standard drop.
Pipe machines, 2", 4" & 6".

Planer, 36"x36" Gray, heavy duty.
Planer, 36"x36"x14' Gray, 2 heads.
Planer, 42"x42"x12' Gray, 2 heads.
Pumps, Gould triplex, 6 1/2"x8".
Punch & shear, 1/2"x10" throat.
Riveting hammers, High Speed
Nos. 2, 3, 4.
Scale, 1500 lb. Toledo, dial type.
Shear, 60" Peck, Stow & W., 18 ga.
Shear, No. 362 Robinson.
Shear, No. 20 Quickwork, 30" throat.
Shear, circular, Pettingell, 60" thrt.
Threading mche., W. & P. 2-spindle.

THE
OSBORNE & SEXTON
MACHINERY Dept. H. **COMPANY**
COLUMBUS **OHIO**

Attractive Prices To Move Stock

BORING MILLS:	Detrick Harvey Post Mill 4 $\frac{7}{8}$ " bar, Niles 6 $\frac{1}{2}$ " bar. Niles Knee Type Horizontal Boring and Milling Machine 6" bar. 36" American..... \$350. 42" Bullard Vertical. 84", and 7' 10" Betts Vertical.
DRILLS:	7" Langelier Sensitive. 20" Champion. 20"-22" Aurora. 24" Sibley B. G. 4 $\frac{1}{2}$ ' Western Radial, m. d. 8' Pond Radial.
LATHES:	14"x6' Lodge & Shipley, q. c. g., taper att..... \$290. 18"x8' 6" Greaves-Klusman q. c. g. 24"x12' Rockford, taper att. 24"x15' Schumacher-Boye cone head. 26"x16' Prentice, taper attachment. 27"x18' Lodge & Shipley, m. d. 48"x37' Putnam Triple Geared. No. 4 Wood Turret Lathe, 1" capacity. No. 1 Cincinnati Universal No. 2M Cincinnati Plain.
MILLING MCHES.:	Canedy-Otto, hand power, $\frac{1}{2}$ "x $\frac{1}{2}$ "..... \$ 45. Beatty No. 7, 42" throat, cap. 1"x1". Cleveland E. F., 36" throat. No. 2 Hilles & Jones hor. punch, 8" throat. Beatty s. e., 48" throat, capacity 1 $\frac{1}{4}$ "x1 $\frac{1}{4}$ ". Kling Bros. Dbl. Angle Shear, cap. 6"x6"x $\frac{3}{4}$ ", m. d.
GRINDERS:	38" Landis Roll Grinder. No. 5 Landis Cylinder. Bridgeport Knife & Drill.
SHAPERS:	14", 24", 30" Gould & Eberhardt, b. g. 28" Ohio Double Geared.
MISCELLANEOUS:	Air Compressor, 12"x12" Ingersoll, b. d. Blower, No. 2 Roots Rotary. Cleaning Barrel 48" dia. 72" long with motor. Crane, Brown 15-ton, 8-wheel locomotive. Floor Crane, No. 3 Canton. Floor Crane, No. 2 Panama. Gear Cutter, No. 13 Brown & Sharpe. Gear Cutter, No. 6 Brown & S., cap. up to 72"x13". Motor, 50 h. p. Allis-Chalmers 3-60-220. Motor, 5 h. p. Gen. Elect. 3-60-200. Planer, Woodward Powell 30"x30"x8". Planers, Cincinnati 48"x44"x12'. Planer, Flather 48"x48"x16' heavy duty. Planer, Cincinnati 42"x36"x12', 2 heads. Planer, Detrick & H. Openside, 96"x72"x26'. Press, equal Stiles No. 4. Profiler, P. & W. table 12"x15", double spindle. Riveter, Hanna, 8 $\frac{1}{2}$ ' reach, 14 $\frac{1}{2}$ " gap, 22" cyl. Rolls, H. & J. No. 0 Straightening, 72" long. Saw, No. 2 Ryerson Friction. Screw Machine, 2 $\frac{3}{4}$ "x11" Acme. Screw Machine, Cone 1 $\frac{1}{4}$ " Multiple Spindle.

RUSSELL MACHINE COMPANY
1447 Oliver Building, PITTSBURGH, PA.

NOT REBUILT

An assortment of exceptional Used Machines
in first class operating condition.

Automatics

- No. 24 New Britain 4-spd. Chucking, complete in perfect condition.
No. 34 New Britain 5-spd. Chucking, complete in perfect condition, motor drive.
5/8" Cleveland Model A.
7/8" Cleveland Model B.
- 1 1/4" Cleveland Model B.
2" Cleveland Model B.
3 1/4" Cleveland Model A, motor drive.
No. 55 National Acme, complete.
2 1/4" Gridley Single Spindle, motor dr.
4 1/4" Gridley Single Spindle, motor dr.
5 1/2" Cleveland Model A.

Bending Rolls

- Cleveland 10' 2", capacity 1" plate.
Kling 10' 2", capacity 1/2" plate.

Brake

- 8' Keene Hand Brake 10 gauge cap.

Broaching Machines

- No. 3L J. N. Lapointe Hydraulic, good as new.
No. 2 J. N. Lapointe.
No. 3 Lapointe Hudson.

Boring Mills

- 10' Betts Vertical.

Drilling Machines

- 6' Bausch Radial, motor drive.
3' American Sensitive Radial, Tapping Attachment.
- 4' Foadick Heavy Duty, New.
6-spindle National Acme Horizontal Automatic Drill.

Grinders

- Badger Automatic Parallel Grinder.
Nos. 2 and 4 Gardner Disc.
- 12"x72" Cincinnati Universal.

Gear Hobbers.

- No. 3 Barber Colman.
No. 5A Lees Bradner.

Lathes

- 10"x 5' P. & W. Tool Room Lathe.
14"x 6' Mulliner Edlund, Taper Att.
16"x 8' Reed L. C. G.
- 16"x 8' Reed Q. C. G.
24"x12' Boye & Emmes.
42"x14' Pittsburgh tr. gr., face plate dr.

Milling Machines

- No. 4 Cincinnati Plain, Vertical Att.
No. 2 Cincinnati Plain.
No. 2 Van Norman, comp. Univ. Equip.
No. 32 Kemp Smith Production.
- No. 13-B Brown & Sharpe Production.
18" Cincinnati, B. G. Plain Miller.
No. 13 Garvin Pl. Miller, not back grd.
Hand Miller with power feed.

Planers and Shapers

- 24" Cincinnati Shaper.
24"x24"x6' Gray Planer, one head.
30"x30"x8' Ohio Planer, two heads.
- 36"x36"x16' Cincinnati Planer 3 hds.
48"x48"x16' Pond Planer, 4 heads.

Presses, Etc.

- Style W Cleveland Punch and Shear 18" throat, 2 1/2" through 1 1/2".
Geared Arch Press, Bolster, 26"x30", weight 7500 lbs.

Welders

- No. 150 Toledo Spot Welder 24" thr.
No. 312B Federal Spot Welder 12" thr.
No. 320B Federal Spot Welder 20" thr.
- 300 AMP Lincoln Arc Welder.
Giv Seam Welder. Type J.R., 22" thr.

Miscellaneous

- No. 2 Cochrane Bly Filing Machine, motor drive.
Reynolds Automatic Screw Driver.
No. 11 Noble & Westbrook Power Marking Machines (2).
National Acme 2-spindle Threader, equal to new.
Production Machine Company, Belt Polishing Machine.
Geometric Die Heads and Collapsible Taps.

**M. A. Wertman Machinery Co., 429 Penton Bldg.,
Cleveland, Ohio**

WILL SELL
At Great SACRIFICE

Imported
MOTORS and HANDPIECES

Flexible Shafts from 3 to 6 feet with ball bearing handpieces—

Listed from \$22.00 to \$80.00

Tools, Grinding Wheels, Worm Gear Reduction Angle Borers, Drilling Handles, Taper Pins with Grinding Wheel, Chucks, Sandpapering Drum Ball Bearing, Screw Driving Handpiece—

Listed from \$2.00 to \$80.00

Driving Pedestals for shaft—

Listed from \$18.00 to \$40.00

Complete Electrical Machines with overhead trolley or portable trucks, consisting of various sizes H. P. motors and accessories—

Listed from \$55.00 to \$500.00

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Henry F. Grill

130 William Street,

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Machines of Quality

**Machines of This Type
are Hard to Find**

42" Bullard Vertical Turret Lathe New Era

61" Bullard Maxi-Mill.

8" Cincinnati Boring Mill.

72" Newark Spur Gear Cutter.

60" Brown & Sharpe Gear Cutter.

**42"x32' AMERICAN GEARED HEAD
LATHE.**

No.16 BLANCHARD MOTOR IN HEAD

No. 2-B MILWAUKEE UNIV. MILLER,

**16-A BLANCHARD AUTOMATIC
SURFACE GRINDER, hand loading
type, direct motor drive, 220 volt,
3 phase, 60 cycle motor, 30 h. p.**

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Mechanics appreciate our
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Bolt Cutters

1½" Acme staybolt cutter.

1½" Landis, sgl. head, with dies.

1¼" Landis, double head, with dies.

Boring Mills—Vertical

44" Baush, 2 swivel heads.

48" Colburn boring mill.

51" Niles-Bement-Pond.

84" Ridgway 2 heads, gear feed, excellent.

Boring Mills—Horizontal

3½" bar Rochester, floor type.

Cranes

5 to 25 ton, all spans, both a. c. & d. c.

Drills

Allen single spindle ball bearing.

4-spd. Moline rail drill, 1½" cap.

No. 1, 8" wall radial.

30" Aurora, sliding head.

24" No. 25 Foote-Burt, with compound table

Several 20" and small sens. drills.

3-spindle Barnes drill press.

No. 41 Natco, round index table.

8-spindle.

No. 13 Natco, multi-spindle.

Forging Machines

6" Ajax, steel bed.

4" Ajax, steel bed.

2" Ajax, cast iron bed.

¾" and 1½" Acme, steel bed.

250-ton Mesta steam hydraulic.

Grinders

84" Diamond face grinder.

18x96" Norton plain.

No. 20 Safety electric floor grinder, 10 HP motor, 32"x4" wheels.

Various electric floor grinders and grinding stands.

26" horizontal disc grinder.

No. 1 Bealy disc grinder, 12".

Keyseaters

No. 00 Baker, capacity ¾"x8", tilting table.

No. 2 Baker, capacity 2"x20½".

No. 5 Mitts & Merrill, 3½" capacity.

Lathes

12"x5' Carroll-Jamieson.

16"x8' LeBlond, friction head.

16" to 18"x6'-8" beds, tool room.

26"x14' Greaves-Klusman lathe.

30"x14' Boye & Emmes, double back geared.

36"x14' Schumacher & Boye, triple geared.

42"—60"x34' Houston, Stanwood & Gamble, grd. hd., mtr. dr.

60"x20' American, triple geared.

Tumbling Barrels

Several sets 18"x48" steel lined, square, with roller bearings and exhaust.

CYRIL J. BATH & CO., E. 70th &

Cleveland Stock

Hydraulic Equipment

175-ton R. D. Wood 4-column Flanging Press.
Morgan Hydraulic Riveter, 8' 6" gap.
Wood and Bement-Miles Hydraulic Riveters, 10' 6" gap.
15-ton Hydraulic Mfg. Co. Press.

Milling Machines

Style "B" Gooley & Edlund, table 54"x11½", (2).
20"x7½"x18" Oesterlein plain, belt drive.
No. 1 Rockford plain, back geared, 22"x6½"x15".
No. 2-B heavy Brown & Sharpe plain, 28"x10"x19".
No. 4 Cincinnati high power miller, table 64½"x16½".
Becker miller, model "C", table 14"x54".
Nos. 2 & 3 Pratt & Whitney Die Sinkers.

Planers and Shapers

30"x30"x8' Gray, single head.
36"x36"x14' Gray planer, 2 heads.
60"x60"x20' Cincinnati, 3 heads, very good.
48"x48"x14' Hamilton, 4 heads.
36"x12' and 48"x16' Detrick & Harvey openside planers.
12" Springfield, crank shaper.
24" Rockford and Queen City shapers.

Punches and Shears

84" throat, Long & Allstatter, capacity about ¾" thru ¾".
Kling Bros. horn press, 60" horn, flywheel 50" dia. 6½" face.
48" throat No. 4 Southwark, capacity 2"x1¼".
48" throat Bement-Miles cap. 1¼"x1".
36" throat Lennox rotary shear, capacity about ½" plate.
15" throat No. 14 Williams & White.
Lennox rotary bevel shear, ¾" capacity.
76" Multiple punch, shear or press, ⅝" capacity.

Turret Lathes and Screw Machines

No. 1-B Foster universal. No. 4 Bardons & Oliver.
3"x36" Jones & Lamson. 1" Garvin screw machine.

MISCELLANEOUS

Acetylene Generator.	Hammer, 100 lb. Bradley helve.
Blower, No. 4 Root, motor drive.	Pipe Machines, 8" Merrill.
Blowers, Nos. 1 & 2 Buffalo Forge.	Slotter, 48" Niles-Bement-Pond,
Chain Hoists, ½, 1, 1½, 4 & 6 ton.	motor drive.

Machinery Av., N. E., Cleveland, O.

Satisfied Customers

Our Guarantee Back

ENGINE LATHES

14"x 6' LeBlond, l. c. g. and chuck.
 14"x 6' Hamilton.
 14"x 6' Porter, compound rest and taper attachment, l. c. g.
 16"x 8' Lodge & Shipley, old style, compound rest, q. c. g.
 16"x 8' Bradford, c. r., loose change gear.
 16"x 8' Monarch, compound rest, standard pattern.
 18"x 7' Fulton heavy duty friction hd. pl. turning lathe, pan bed, dbl. tool post and countershaft, new.

18"x 8' Prentice, compound rest, l. c. g., chuck.
 18" x8' Porter, 4-step cone, s. b. g., q. c. g. engine lathe, complete, new.
 18"x 8' Superior, c. r., q. c. g.
 18"x10' Star, 4-s. c., s. g., with 18" 4-jaw ind. chuck.
 20"x 8' Reed friction head, with turret on carriage.
 20"x10' Boye & Emmes, c. r., q. c. g.
 24"x10' Greaves & K., c. r., q. c. g.
 20"x10' S. & B. c. r., loose change gear

TURRET LATHES AND SCREW MACHINES

No. 00 Brown & Sharpe auto.
 No. 0 Brown & Sharpe auto., (2).
 12" W. & S., friction head.
 12" W. & S., friction head, with set-over turret.
 14" W. & S., friction head, (2).
 16" W. & S., friction head.
 No. 4 Warner & Swasey, p. h., a. c. and b. f.
 No. 2 Warner & Swasey, p. h., a. c. and b. f.
 No. 4 Warner & S., g. f. h., a. c. and b. f.
 No. 3 Foster g. f. h. turret screw mch., with p. f. carriage and turret.

No. 55 Nat'l Acme 4-spdl. auto.
 24" Cleveland model "A" auto. screw mch., with 5-hole turret.
 14" Cleveland model "A" auto. screw mch., with 5-hole turret.
 No. 2-G Brown & Sharpe auto-matics (2).
 No. 2 Brown & Sharpe turret forming (2).
 1"x7" Millholland, pl. hd., auto. ck., bar fd., hand fd., cross slide and turret, complete, new.
 1"x7" Millholland turret screw mch., pl. hd. auto. ck., bar feed hand fd. cross slide, with power fd. tur., new.

DRILLING MACHINES

No. 1-S Garvin duplex, (2).
 3" American sensitive radial with t. a. and elevating table.
 4' Mueller, gear box, agl. pulley dr.
 5' and 6' Americans, tr. grd., 8-speed change, gr. box, agl. pulley drive.
 21" Aurora W. & L., square base, stationary head.
 6' Western, with speed box, tap. att.
 5' American triple purpose, with speed box.
 No. 14 Colburn heavy duty.
 No. 25 Foote-Burt heavy duty, (2).
 12-spindle Moline, cam fd., two tbl.
 No. 1, 7" overhang, single spindle, Allen, h. s., b. b. (3).
 No. 14 Natco.

Fox multiple spindle, sliding head, arranged for 12 spindles (4).
 3-sp. Edlund, high sp., ball bearing.
 No. 22 Colburn, agl. sp., hvy. duty, 14" cap., with solid spindle and flange for receiving multiple drill heads, new, (2).
 No. 44 Colburn, agl. sp. heavy duty, 24" cap., with solid sp. and flange for receiving multiple drill heads, new, (2).
 Colburn horizontal duplex drill, 24" cap. with rotating table, arranged for motor drive, new.
 No. 34 Demco high speed bench drill with C spindle, new.

The Strong, Carlisle & Hammond Co.,

Our Best Asset Of Every Rebuilt Tool

MILLING MACHINES

- | | |
|---|---|
| No. 0 Bickett, hand, bench type, (3). | 24"x18"x60" Ingersoll, Farwell vertical milling head. |
| No. 1 Brown & Sharpe vertical. | No. 1-Y Brown & Sharpe plain. |
| No. 2 Cincinnati vertical, s. p. d. | No. 12 B. & S. manufacturing. |
| No. 3 Cincinnati plain, s. p. d. (2). | 12-B Brown & Sharpe, plain manufacturing, (2). |
| No. 4-A B. & S. univ., m.d., vert. att. | |
| No. 14 B. & S. cone drive, univ. | |

METAL CUTTING TOOLS AND SQUARING SHEARS

- No. 3 Atkins band saw, belt driven, new, (2).

GEAR CUTTERS AND HOBBERS

- 26" No. 3 Brown & Sharpe automatic.

SHAPERS AND PLANERS

- | | |
|---|---|
| 16" American, b. g. c., complete. | 16" Smith & Mills, back grd. crank. |
| 16" American back geared, single pulley drive, motor driven, 440 volt, 3 phase, 60 cycle mtr., t. b. control. | 22"x22"x 5' Putnam planers, (2). |
| 20" Kelly b. g. crank. | 30"x30"x10' Woodward & Powell, three heads. |
| 20" Hendey friction, (2). | 72"x72"x36' Fitchburg, four heads. |

CENTERING MACHINES

- Centering machines, single spindle Cadillac.

GRINDERS

- | | |
|--|--|
| No. 1 Brown & Sharpe universal. | No. 1 LeBlond cutter grinder. |
| No. 3 Brown & Sharpe universal. | J. B. Point "Yankee" drill grinders, complete, new, (2). |
| No. 2 Cincinnati univ., latest type. | Type "DE" Hisey-Wolf internal. |
| No. 13 B. & S. univ. and tool. | No. 11 Brown & Sharpe pl. grinders. |
| No. 3 Diamond wet tool grinder with drop apron, new. | Plain emery wh'l stand with column. |
| No. 4 Diamond wet tool grinders with drop apron, new, (2). | No. 1 Woods cutter and reamer grinder, complete, new. |
| No. 10 Brown & Sharpe plain. | No. 2 Woods cutter and reamer grinder, complete, new. |
| No. 14-30" B. & S. plain cyl., (2). | No. 24 Woods cutter and reamer grinder, complete, new. |
| No. 14-48" B. & S. plain, (2). | 20" Whitney wet tool grinders, complete with countershaft, new, (2). |
| 6"x30" Norton plain, (2). | C3A Grand Rapids duplex drill grinders with wet att., new, (2). |
| No. 24 Landis plain. | |
| 8" Heald rotary surface grinder with magnetic chuck. | |
| No. 6-A Bryant internal. | |

MISCELLANEOUS

- | | |
|--|---|
| Bolt cutter, 1" National 2-spindle, with Landis heads. | Filing machine, No. 2 Cochrane-Bly. |
| Boring or drilling machine, No. 1-S Garvin duplex horizontal, (2). | Marking machine, Etchograph. |
| Boring mill, 36" Gisholt vertical swivel head, chuck jaws. | Pipe machine, 8" Jarecki, No. 89. |
| Broach, No. 2 double Lapointe. | Pipe machine, 4" Oster. |
| | Profiler, No. 12, 2-spld. P. & W. vert. |
| | Scleroscopes, Shore, (4). |

Cleveland, Ohio; Detroit, Michigan

SPECIAL OFFERINGS

DRILL PRESSES

1-22½" Sibley all geared, with tapping attachment.....	\$ 125.
1-20" Sibley Drill Press.....	45.
1-32" Superior, back geared, power feed, sliding head...	200.
1-28" Barnes, back geared, sliding head, tapping attachment, compound table.....	295.
1-No. 3 Baush Multiple Spindle Drill, 20"x40" rectangular head. Arranged for 20 spindles, equipped with 10 spindles	750.

GRINDERS

1-No. 1 Cincinnati Universal Cutter and Tool.....	\$ 150.
1-No. 1 LeBlond Cutter and Tool.....	250.
1-No. 190 Greenfield Cutter and Reamer.....	150.
1-No. 15 Bryant Semi-automatic Hole Grinder.....	900.
1-6"x32" Norton Plain Cylindrical.....	350.
1-No. 10 Brown & Sharpe Plain Cylindrical	500.
1-12"x72" Cincinnati Universal, with internal attachment	1200.

ENGINE LATHES

1-14"x6' Carroll-Jamieson	\$ 175.
1-14"x6' Flather, loose change gear	150.
1-15"x6' LeBlond, Q. C. G., cone type, taper att. Like new	750.
1-21"x11' LeBlond, quick change gear, all geared head. Not latest type, but in good order	500.
1-14"x6' Reed, loose change gear	150.
1-15"x6' South Bend, loose change gear, compound rest and taper attachment.....	250.
1-14"x6' American, quick change, compound rest.....	250.
1-18"x10' Reed, quick change gear, taper att. Like new	925.

LATHE

1-3½"x36" Lo-Swing Lathe	\$ 225.
--------------------------------	---------

Peninsular Machinery Company,

From Our April Stock

TURRET LATHES AND SCREW MACHINES

1-2½"x36" Pratt & Whitney Geared Hd. Turret Lathe.....	\$ 300.
1-No. 3 Foster Friction Head Turret Lathe.....	325.
1-16" Defiance Hex. Turret Screw Machine.....	250.
1-No. 3 Warner & Swasey Turret Screw Machine.....	175.
1-1"x15" Pratt & Whitney Turret Lathe.....	400.
1-No. 2 Warner & Swasey Hollow Hex. Turret Lathe..	300.
1-No. 6 Brown & Sharpe Turret Screw Machine.....	800.

MILLING MACHINES

1-No. 10 Pratt & Whitney Hand Miller.....	\$ 150.
1-No. 32 Kempsmith, Lincoln type.....	350.
1-No. 3H LeBlond Pl., cone type, rebuilt by manufacturer. Like new. Feed range 34"x12"x20". Complete with all attachments.....	1300.
1-No. 3H LeBlond Pl., cone type, fd. range 42"x12"x20". In fine shape. In fact, equal to new.....	1300.
1-No. 2 Knight Vertical Milling Machine.....	500.
1-No. 0 Brown & Sharpe Plain.....	300.

ELECTRIC MOTORS

2-15 H. P., 220 volt, 60 cycle, 3 phase, each.....	\$ 150.
1-10 H. P., 220 volt, 60 cycle, 3 phase.....	100.
1-5 H. P., 220 volt, 60 cycle, 3 phase.....	50.
1-30 H. P., 220 volt, 60 cycle, 3 phase.....	200.

MISCELLANEOUS

1-No. 15 Lea-Simplex Cold Saw. Like new.....	\$ 500.
1-LaPointe Broaching Machine, cap. ¾" keyways, broach ¾" square, screw 2" diameter, 48" long.....	200.
1-18" Gleason Bevel Gear Generator.....	750.
1-No. 6 Fellows Gear Shaper.....	350.
1-No. 3 Atlas Arbor Press on Stand.....	75.
1-No. 4 Hurlbut-Rogers Cutting-Off Machine, cone type	200.
1-No. 4 Catlin Keyseater, capacity 1/16" to 3½" wide, 28" stroke. Like new.....	450.

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4' & 6' Drees High Duty Pl Rad., g. b. d.
 4' & 6' Cinti.-Bick. Plain, g. b. d.
 5', 3½' and 3' American Triple Geared
 Plain Radials, gear box drive.
 3½' & 3' Mueller Plain Radial, g. b. d.
 3' Reed-Prentice Plain Radial, g. b. d.
 2½' Fordick Plain Radial, cone pulley.
 4' Hammond b. b. Sens. Radial, t. a.
 3' American b. b. Sens. Radial, t. a.
 2½' Carlton b. b. Sens., tap. att.
 Nos. 1 & 3 W. F. & J. Barnes Hor. Rad.
 28" & 28" Snyder Upright Drill.
 28" & 26" W. F. & J. Barnes Up., latest.
 28" Aurora Upright Drill.
 26" W. F. & J. Barnes Up. t. a.
 25" Snyder Upright Drill.
 25" Kokomo High Speed Upright Drill.

22" W. F. & J. Barnes Upright, t. a.
 22" Aurora Upright, tap. att.
 24" Sibley Upright Drill.
 24" Cincinnati-Bickford Upright Drill.
 21" Cinti.-Bickford Upright Drill.
 20" Barnes All-Grd. Drill and Tapper,
 self oiling type.
 3-Spindle W. F. & J. Barnes Gang 26".
 6-Spindle 20" Hoefler Gang Drill.
 2-Spindle Allen b. b. Drill.
 3-Spindle Superior b. b. Drill.
 D-No. 2 Colburn Heavy Duty Drill.
 Henry & W. Class "B" b. b. Drill.
 No. 41 Natco Multiple Drill, 8-spdl.
 No. 0 Fox Multiple, 6-spindles.
 No. 5 Fox Multiple, 12-spindles.
 No. 13 Pratt & Whitney Mult., 8-spdl.

ENGINE AND TURRET LATHES

42"x18" Amer. G. H., q. c., m. d., late.
 36"x28" Amer. G. H., q. c., m. d., late.
 30"x14" Lodge & Shipley q. c.
 26"x14" Boye & Emmes q. c.
 24"x14" Gleason Standard Change.
 24"x10" G. & K. Hvy. Duty, q. c., late.
 22"x12" Whitcomb-Blaisdell semi-q. chg.
 21"x10" LeBlond q. c. Lathe.
 20"x10" American q. c., latest type.
 19"x10" LeBlond q. c. Lathe.
 18"x10" Greaves & K. q. c.
 18"x8" Sidney quick change.
 18"x8" Mueller, q. c. Lathe, 95% new.
 16"x10" Hendey, yoke hd., q. c., t. a.
 16"x8" Lodge & Shipley, q. c., late type.
 16"x6" Monarch quick change Lathe.
 14"x6" L. & S. sel. grd., hd., q. c., late type.

12"x6" Seneca Falls g. h., q. c., t. a.
 Nos. 2A & 3A Warner & Swasey, Univ.
 hol. hex. Turret Lathes.
 No. 1B Foster Univ. hollow hex. Turret.
 21" Ginholt Tur. Lathes, tap. att.
 3"x36" J. & L. dbl. spdl. Turret Lathe.
 with air chucks.
 3¼"x40" Greenlee Flat Tur., bar equip.
 Nos. 2, 4, 6 Warner & S. Turret Lathes.
 Nos. 2, 4, 6 Foster Turret Lathes.
 No. 4 Brown & Sharpe Wire feed Screw
 Machine.
 No. 4 Bardons & O. Turret Lathes.
 No. 4 Millholland Turret.
 1" Biggs Hand Screw Machine.
 No. 2 B. & O. Hand Screw Machine.
 1" Pearson Hand Screw Machine.

MILLING MACHINES

No. 4 LeBlond Univ., cone pu. complete
 Nos. 3 and 2 B. & S. Univ., c. p., comp.
 No. 1½ Cinti. Univ., cone p., complete.
 Nos. 2½, 1½ LeBlond Univ., c. p., com.
 No. 1½ Valley City Univ., c. p., complete.
 No. 1 Owens Univ., cone pul. complete.
 No. 5 LeBlond Plain, m. d., all geared.
 No. 4 Cin. High Power Pl., c. p. late.
 No. 3 B. & S. Plain, c. p., p. r. t., late.
 No. 3 Hvy. Ohio Plain, c. p., p. r. t.
 No. 3 Hvy. LeBlond Plain, cone pulley.
 No. 3 Kempnith Plain, cone pulley.
 No. 2½ LeBlond Plain, c. p., late type.
 Nos. 0, 1½, 2 & 3 Cincinnati Pl. c. p.

No. 1 Kempnith Plain, cone pulley.
 No. 1-B B. & S. Plain, single pulley.
 No. 5C Becker Vertical Miller.
 No. 2 Brown & Sharpe Vertical Millers.
 No. 4 Becker Vertical Miller.
 28" Cincinnati Semi-Auto. Duplex.
 No. 7H Becker, Lincoln type, Mfg.
 Gooley & Edlund, Briggs type, Mfg.
 No. 6 Whitney Hand Miller.
 No. 2 Bristol b. b. Hand Miller.
 No. 2 Knight Milling and Drilling Mche.
 No. 2 Pratt & Whitney Hand and Power
 Miller.
 No. 3½ Fox Hand and Power Miller.

EASTERN MACHINERY CO.,

We also Buy machinery.

Rebuilt and Guaranteed Machine Tools

SHAPERS AND PLANERS

32" Cinti. hvy. duty b. g. Crank, m. d.
24" Cincinnati heavy duty b. g. Crank.
20" Cincinnati heavy duty b. g. Crank.
20" Kelly heavy duty, b. g., Crank
16" G. & E. high duty b. g. Crank.
16" Hamilton heavy duty, b. g., Crank.
16" Smith & Mills h. d., b. g., Crank.

16" Steptoe heavy duty, b. g., Crank.
15" Potter & Johnston Universal Crank.
14" Steptoe Plain Crank.
36"x36"x12' D. & H. Opens. 2-heads.
36"x36"x14' American Planer, 2-hds.
38"x38"x18' Niles Planer, 2 heads.
24"x24"x8' W. & P., 1 head.

GEAR MACHINERY AND GRINDERS

No. 12 Barber-Colman Gear Hobber.
No. 18-H Gould & E. Gear Hobber.
No. 5-A Lees-B. Gear Hobber.
No. 6 Fellows Gear Shapers.
20" Ingle Gear Tooth Rounding Mche.
No. 5-60" B. & S. Auto. Spur Gr. Cut.
No. 4-48" B. & S. Auto. Spur Gear Cut.
No. 3-26" B. & S. Auto. Spur Gear Cut.
No. 13 B. & S. Aut. Spur & Bevel Cut.
84" Diamond Face Grinder, arr. for m. d.
No. 2 B. & S. Surface.
Nos. 2 & 3 W. & M. Auto. Surface.
8" Arter Rotary Surf., mag. chuck.
Walker Single Stroke Vertical Surface
Grinder, 10" dia. magnetic chuck.
8" Heald Ring & Surface Grinder.

Nos. 70 & 75 Heald Internal Grinders.
No. 60 Heald Cyl., late type, complete.
Capital Internal, collet attachment.
No. 120 Gardner Double Disc.
No. 120 Gardner Combination Disc.
No. 4-23" & No. 6-26" Gardner Disc
No. 18-30" Gardner Pat. Mkrs. Disc.
No. 7-30" Gardner Disc Grinder.
No. 12-26" Bealy Disc Grinder.
Nos. 1 & 3 Brown & Sharpe Universal.
6"x32" and 18"x96" Norton Plain.
10"x50" Norton Plain, arr. m. d.
No. 2-12"x36" Cincinnati Plain.
8"x30" Modern Pl., self-cont., 95% new.
No. 2 Oakley Univ. Tool & Cutter.
No. 1 LeBlond Univ. Tool & Cutter.

MISCELLANEOUS

Nos. 4 & 5 Greenard Arbor Presses.
No. 4 Atlas Arbor Press.
No. 55 Atlas Power Arbor Press.
No. 29 Atlas Arbor Press.
15-Ton Herc. Pwr. Arbor Press, b. d.
15-Ton Lucas Pwr. Fore. Press, b. d.
No. 52 Nat. Acme 4-spld. Automatic.
No. 33 New Britain Auto. Chk. Mche.
Nos. 2 & 3 LaPointe Broach Machine.
Nos. 2 & 3 LaP. Dble. Broach Mche.
1" Acme Class "A" Bolt Cutters.
1½" & 2" Landis dbl.-spld. Bolt Thread.
1" Landis Bolt Thread., lead screw.
1" Landis Bolt Threading Machine.
24" Bullard rapid prod. Vert. Boring
Mill, turret and side head.
30" King Vert. Boring Mill, turret head,
power rapid traverse, m. d.
42" Bausch Vert. Boring Mill, 2-heads.
51" Niles Vert. Boring Mill, 2-heads.
50" Bullard Vert. Boring Mill, 2-heads.
No. 2 P. & W. Die Sinkers.
No. 5 L. & J. o. b. i. Power Press.

C-No. 3 Ferracute o. b. i. Power Press.
No. 4 Niagara o. b. i. Power Press.
No. 3 Bliss, Stiles pattern, Power Press.
No. 64 Con. S. S. Press, flywheel.
No. 73½ Bliss Trim. with side shear.
6" Toledo Pwr. Sq. Shear, 14 ga. cap.
No. 1 Davis Keyseaters, cap. 1" keywys.
No. 00 Baker Keyseater, cap. ¾" kywys.
Nos. 4 & 5 M. & M. Keyseaters.
Nos. 2A & 3A High Speed Riv. Ham.
40 & 60 lb. Bradley Helve Hammers.
600 lb. Chamb. Spl. Frame St. Ham.
No. 12 P. & W. 2-sprindle Profilers.
No. 1 P. & W. 2-spld. Gun Bar. Drill.
4½"x12" & 6"x24" P. & W. Thr. Mill.
Nos. 1, 2 2X & 2BG Garvin Auto. Tap.
18"x12"x12" Worthington dbl. steam dr.
Air Comp, cap. 700 cu. ft.
12"x12" Racine High Speed Pwr. Hack
Winfield Elec. Spot Welder, cap. to weld
2 pieces of ¼" material.
6"x6" Racine High Speed Power Hack
Saw.

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What have you to Sell?

QUALITY TOOLS—*not how cheap, but how good!*

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- 7-12"x5' Hendey T. A.
- 2-14"x6' Hendey T. A.
- 1-14"x6' LeBlond.
- 1-14"x6' American T. A.
- 1-Monarch 16"x6' Q. C.
- 1-16"x7' Hendey T. A. with reliev. att., draw-in bar, collets, pan bed.
- 2-16"x8' Hendey T. A.
- 1-Rahn Carp. 18"-24"x6' Gap Bed.
- 1-22"x44" Harrington gap.
- 1-20"x8' Monarch.

MILLS

- 2-No. 2 Brown & Sharpe univ.
- 1-No. 2 Hendey universal.
- 1-No. 2 Cincinnati universal.
- 1-No. 2 LeBlond universal.
- 2-No. 2 Valley City universal.
- 2-No. 2 LeBlond universal.
- 10-Plain, standard makes.
- 6-Gookey & Edlund types A & B.
- 2-No. 2 Van Norman Duplex.
- 2-No. 4 & No. 5 Becker vertical.
- 2-No. 3 & No. 4 Cincinnati vert.
- 1-No. 3 Lees-B. Thread Miller.
- 2-Newton spline mills
- 2-Hendey prod. mills, Lincoln type
- 2-Beaman & Smith prod.
- 1-No. 2 Knight combination
- 1-36" Bullard vert. boring, side hd.
- 1-No. 1 Lambert horizontal.

SHAPERS

- 3-16" G. & E. cone.
- 2-20" G. & E. cone.
- 1-20" G. & E. arranged M. D.
- 2-24" G. & E. cone.
- 1-16" Smith & Mills.
- 1-24" Sterling, single pulley drive.
- 1-32" Morton draw-cut.
- 1-20" Columbia (new).

DRILLS

- 5-2 spindle Fosdick H. S., B. B.
- 1-4 spd. Henry & W., H. S., B. B.
- 1-4 spindle Avey H. S., B. B.
- 1-6 spindle Allen H. S., B. B.
- 1-1 spd. Henry & W., H. S., B. B.
- 3-24" Cincinnati Sliding Head B. G. P. F.
- 1-25" Barnes Sliding Head B. G. P. F. with tapping attachment
- 2-26" Barnes Camel Bk. arr. M. D.
- 1-32" Cleveland Sliding head B. H. P. F.
- 1-No. 17 Foote-Burt, Hvy. Duty.
- 1-4 spd. Barnes 26" Camel Back.
- 1-No. 1 Bausch mult. spd.
- 1-31" Cincinnati Bickford Radial.
- 1-3 Bickford Radial.
- 1-4" Mueller Radial.

- 1-3' American Sensitive Radial.
- 1-No. 2 Colburn H. D.
- 1-No. 65-D 5 spdl. Moline H. D.
- 1-Detroit semi. auto.
- 1-National Acme semi. auto.
- 4-26" W. F. & J. Barnes.
- 2-Barnes Horizontal.

GRINDERS

- 2-No. 2 B. & S. mag. chucks.
- 2-No. 2 B. & S. universal.
- 1-No. 11 B. & S. plain.
- 2-No. 10 B. & S. plain.
- 3-No. 65 Heald cylinder.
- 2-No. 2 W. & M. surface.
- 2-No. 3 W. & M. surface.
- 1-No. 14 P. & W. vert. surface.
- 1-60" Reed Prentice vert. surface.
- 2-No. 1 LeBlond T. & C.

TURRET and AUTO LATHES

- 2-No. 2A W. & S.
- 3-No. 6A P. & J.
- 4-2 spindle Jones & Lamson.
- 2-Gisholt Simplimatics M. D.
- 2-No. 24 New Britain.
- 1-24" Gridley 4 spdl.
- 3-No. 4 Bardons & Oliver.
- 16-Fosters No. 2-3-5-7.
- 2-No. 20 Gisholt semi-auto.
- 3-No. 2 Warner & Swasey.
- 2-No. 4 W. & S. friction head.
- 2-No. 6 W. & S. friction head.
- 3-Springfield Fox Monitors.

PRESSES

- 1-No. 93B Toledo grd. dbl. crank.
- 1-No. 55 Toledo s. a.
- 1-No. 24 Michigan Horn.
- 1-No. 409B Bliss toggle.
- 1-No. 68 Bliss double action.
- 2-Holmes Screw.
- 2-No. 20 Bliss O. B. I.

MISCELLANEOUS

- 1-P. & W. Relieving Lathe.
- 1-15-Ton vert. Broach.
- 1-8" Newton Slotter.
- 1-24" Gray Planer.
- 1-30" Wilson Planer.
- 1-36" Niles Planer.
- 6-Hurlburt & Rogers cut-off.
- 1-Lees Simplex Cold Saw.
- 10-Air compressors.
- 1-24" Landis Bolt Cutters.
- 1-each No. 2-3-4 LaPointe broach.
- 4-No. 1 Garvin tappers.
- 2-No. 2 Garvin tappers.
- 1-1000 lb. Chamber. stm. hammer.
- 1-1500 lb. Chamber. stm. hammer.
- 1-7500 lb. Chamber. stm. hammer.

Every Machine Rebuilt and Guaranteed

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The used Machinery House 251 St. Aubin Ave., Detroit, Mich.

Large Machine Tools

Exceptional Bargains

Lathes

- 25"x10' LeBlond Heavy Duty, Q. C., late type.
- 25"x12' LeBlond H. D., Q. C., late type, like new.
- 25"x16' LeBlond H. D., Q. C., late type.
- 27"x18' American Q. C., excellent.
- 36"x16' Fay & Scott L. C., cone drive, complete.
- 44"x40' Pond L. C., cone drive, triple geared.

Radial Drills and Drill Presses

- 4' Bickford S. P. D., tapping attachment.
- 4' Dreses S. P. D., tapping attachment.
- 5' Bickford Full Universal, S. P. D., tapping attachment.
- 5' American S. P. D., tapping attachment.

Vertical Boring Mills

- 30" Colburn one head, late type.
- 36" BULLARD RAPID PRODUCTION, one turret head, one side head, and chuck table, complete, S. P. D.
- 60" Niles, two swivel heads arranged with drilling, boring and milling spindles.

Shapers

- 24" Ohio B. G., C. D., late type.
- 28" Gould & Eberhardt Invincible, late type.
- 32" Cincinnati Climax S. P. D., 98% new.

Pipe Machines

- 6" Oster, cone drive, complete with dies.
- 8" Burman & Cole, complete, S. P. D.
- 12" Standard Weiland, latest type, complete, like new.

Extra Special 48"x48"x16' Detrick & Harvey Open Side Planer, two heads, rebuilt, - - **\$2500.**

500 Tools in stock. Write for latest Catalog.

Cincinnati Machinery & Supply Co.
30 West Second St., CINCINNATI, OHIO

Bargains In New Tools and Used Tools

36" Bullard Vertical Turret Lathe, Side Head, Single Pulley Drive

MILLING MACHINES

Used No. 2-A B. & S. univ., g. h.
Used No. 2 Oesterlein universal.
Used No. 2 Kempamith universal.
Used No. 2B B. & S. plain, g. h.

Used No. 3 Brown & Sharpe, plain.
Used No. 3 Cincinnati pl., vert. att.
Used No. 14 Cochran-Bly miller and shaper.

LATHES

Used No. 3 Hardinge bench, 4" cap.
New 12"x5' Sidney g. h., taper.
New 11"x5' Seneca Falls.
New 14"x6' Monarch, taper att.
Used 14"x6' Monarch, q. c.
Used 14"x6' Hendey, q. c.
Used 16"x6' Hendey, q. c.
New 16"x8' Monarch, q. c.
New 16"x7' Chard Mfg. type.
New 16"x9' Chard, q. c.

Used 18"x8' Lodge & Shipley, q. c.
New 18"x8' South Bend, pl. change.
New 18"-28"x8' South Bend gap.
Used 20"x10' Greaves-Klusman.
New 20"x8' Boye & Emmes, q. c.
New 20"x10' Monarch, q. c.
Used 24"x12' Boye & Emmes, q. c.
New 26"x14' Boye & Emmes, q. c.
New 26"x12' Boye & Emmes, q. c.
Used 24"x16' Boye & Emmes, pl. c.

SENSITIVE DRILLING MACHINES

New Allen Drills, 1, 2, 3 & 4 spdls.
Used 1-spindle Allen Drill.

Used 4-spindle Allen Drills.
Used 2-spindle Foadick ball bearing.

RADIAL DRILLS

New Drees 3' Simplex, speed box.
Used 3' American, cone drive.
New Drees 8' multi-duty.

Used 5' Drees.
Used Hammond type B sensitive.

UPRIGHT DRILLS

Used 20" Hoefer wheel and lever fd.
New 20" Snyder, b. g., p. f.
Used No. 2, 22" Colburn mfg. type.
New 23" Snyder, tapping att.
Used 24" Mechanics, sliding head.

Used 25" Barnes, stationary head.
Used 26" Barnes, sliding head.
New 25" Snyder, tapping att.
New 28" Snyder, sliding head.
New 30" Snyder, sliding head.

MULTIPLE DRILLS

New Baush No. 4 hd. 22x5:41 spdls.
New Baush No. 4 hd. 30x46 22 spdls.

Barnes 22" 3-spindle, gang drill, automatic return.

SHAPERS AND PLANERS

Used 16" Smith & Mills.
Used 16" Mattison, back geared.
Used 24" Cincinnati, b. g.

Used 26"x28"x8' Flather, 1 head.
New 36"x36"x12' W. & P., 2-heads.

GRINDERS

New Morse No. 3 plain, 8"x40".
Used No. 10 B. & S. plain, 6"x20".
Used Gisholt tool grinder.
New No. 78 W. & M. surf. grinder.

New Churchill internal.
New No. 9 Cincinnati internal.
New Bath No. 2 univ. equipt. c.
New W. & M. No. 3 surf. grinder.

SCREW MACHINES AND PRESSES

Used No. 3A W. & S. universal.
Used No. 2A W. & S. universal.
Used No. 3 Superior.
New Nos. 1, 2, 3, 4 and 5 Federal.

New Wood tilted turret all sizes
No. 1 to 4 inclusive.
Used No. 18 Bliss.

MISCELLANEOUS

Used No. 12 B. & K. pipe mch., m. d.
Used 12" Landis pipe machine, m. d.
Used 4" B. & K. pipe mche., m. d.
New 4" Standard pipe machine.

Used 6"x6" Peerless shap. saw, m. d.
New No. 2 Adams-F. gear hobber.
New No. 3-B LaPointe broach.

Manning, Maxwell & Moore, Inc.
27 N. Jefferson St., Chicago, Ill.

Davis Machinery Exchange

Special April Offerings

Selected Tools

14" Davis Crank Shaper, s. g.
 28" Ohio Crank Shaper, b. g.
 30"x30"x10" American Planer, 1 hd.
 13"x6" Sidney q. c. g. Eng. Lathe, comp.
 13"x5" Willard l. c. g. Eng. Lathe, comp.
 14"x6" Walcott q. c. g. Eng. Lathe, comp.
 14"x6" Monarch q. c. g. Engine Lathe, complete.
 14"x6" Seneca Falls l. c. g. Engine Lathe, complete.
 15"x6" South Bend l. c. g. Engine Lathe, complete.
 16"x6" Monarch q. c. g. Engine Lathe, complete.
 16"x8" Rahn-Carpenter l. c. g. Engine Lathe, complete.
 18"x8" Am. q. c. g. Eng. Lathe, comp.
 18"x8" Greaves-Klusman q. c. g. Engine Lathe, complete.
 20"x10" Johnson l. c. g. Engine Lathe.
 20"x10" Draper l. c. g. Engine Lathe, complete.
 24"x10" Hendey q. c. g. Engine Lathe, yoke head, complete.
 26"x12" Walcott q. c. g. Eng. Lathe, com.
 26"x14" Walcott q. c. g. Eng. Lathe, taper attachment, complete.
 5"x60" Fitchburg Lo-Swing Lathe.
 No. 1 Kempsmith Univ. Mill, dividing head, cone pulley.
 No. 3 Kempsmith Plain Mill, dividing head, cone pulley.
 No. 3 Cincinnati Plain Mill, cone pul.
 No. 3 Cincinnati Univ. Mill, old style cone pulley.
 B. & S. Univ. Mill, old style cone pul.
 No. 2 Cinti Plain Mill, geared feeds.
 30" Brown & Sharpe Vertical Mill, cone pulley, turret and boring head.
 No. 1 Knight Miller.
 Fox Hand Miller, cone pulley, power feed, vertical head.
 Fox Hand Miller, cone pulley.
 No. 1 Burke Bench Miller, cone pul.
 No. 6 Whitney Hand Mil., b. dr. (3).
 U. S. Hand Miller, cone pulley.
 10" Barnes Friction Drive Bench Drill.

Money-Back Guarantee

No. 1 Burke Bench Drill, m. d.
 Rockford Bench Drill, tilting table.
 Dumore Electric Bench Drill.
 No. 2 Colburn Mfg. Drill, s. p. d.
 4" Hammond Hinged Arm Sen. Rad.
 Natco Multiple Drill, 16-spindles, t. and l. pulley.
 20" Barnes Drill Press, b. g. & p. f.
 24" Cincin. Sl. Hd. Drill, b. g. & p. f.
 24" Snyder Sl. Hd. Drill, b. g. & p. f.
 26" Barnes Sl. Hd. Drill, b. g. & p. f.
 No. 1 Wilmarth & Morman Surface Grinder, hand feed, 6"x15".
 No. 55 Heald Cylinder Grinder.
 12"x36" Modern Grinder, self-cont., max. 12 1/4"x40".
 10"x36" Norton Grinder.
 16" Norton Double Wheel Snagging Grinder.
 20" Norton Double Wheel Snagging Grinder.
 No. 6 Bryant Hole Grinder.
 32" Fay & Egan Knife Grinder.
 42" Baldwin T. & B. Knife Grinder.
 Capital Internal Grinder.
 No. 3 Toledo o. b. i. Press, b. g.
 No. 3 Niagara o. b. i. Press.
 No. 3 Bliss Solid-Back Press.
 No. 3 Sullivan o. b. i. Press, flywheel.
 No. 3 Etna o. b. i. Press, flywheel.
 No. 3 Toledo o. b. i. Press, flywheel.
 No. 9 Cleve. o. b. i. Press, flywheel.
 No. 25 Cleveland Homing Press, fly-wheel adjustable table.
 D. G. C. 54 Ferracute S. S. Press, b. g., 14" stroke.
 40 Ton Manhattan Screw Press.
 No. 14 Stoll o. b. i. Press, flywheel.
 No. 4 Atlas Arbor Press.
 18" Disc Press.
 Atlas Dbl. Hous. Arbor Pr. 38" clear.
 No. 1 Foster Hand Screw Mch., w. f.
 No. 3 Foster Hand Screw Mch., w. f.
 No. 4 Warner & Swasey, power feed to turret, wire feed.
 No. 7 Foster Turret Lathe, p. f. to turret and cross-slide.

Any of the above will be demonstrated under belt if desired
 Many more items in stock We also buy used machinery

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**Plain Milling Cutters
Side Milling Cutters
Metal Slitting Saws
Concave Cutters
Convex Cutters
Angular Cutters**

**Straight Shank End Mills
Slotting End Mills
Keyway Cutters
Bevel Gear Cutters
Counterbores
And Many Others**

Write for this Special Stock List today

And take advantage of this unusual opportunity to obtain high grade, finest quality cutting tools

AT HALF PRICE!

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**When you compare them with factory
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REG. U. S. PAT. OFF.

**This is only a partial list. Write for price on
any tool you need, whether listed below or not.**

LATHES

- 1-56"x64"x18' Johnson.
- 1-45"x24' Pond.
- 1-30"x34"x12' L. & S. Sel. Hd.
- 1-36"x16' Bridgeford.
- 21-26"x10' Canada.
- 12-23"x12' LeBlond.
- 1-24"x20' Reed-Prentice, Grd. Hd.
- 9-24"x11' Cisco.
- 2-21"x10' LeBlond.
- 5-20"x12' American.
- 1-20"x10' Hamilton.
- 1-20"x8' LeBlond.
- 1-18"x8' L. & S. Sel. Head.
- 1-18"x8' Hamilton, M. D.
- 1-17"x8' LeBlond.
- 1-16"x14' American, Geared Head.
- 1-14"x6' American Geared Head.

MILLERS

- 1-No. 6 Becker Vertical.
- 1-No. 3 Cincinnati Vertical.
- 1-No. 2B Milwaukee Vertical.
- 1-No. 5 Ingersoll Comb.
- 1-No. 4 Cincinnati, Hi-Power.
- 2-No. 3-B Milwaukee, s. p. d.
- 1-No. 24 Ohio.
- 1-No. 14 Cincinnati.
- 1-No. 3 Kempsmith Plain.
- 1-No. 3-A B. & S. Univ.

PLANERS

- 1-60"x48"x30' Hamilton.
- 1-42"x42"x22' Niles-Bement-Pond.
- 2-36"x36"x18' Cincinnati.
- 1-36"x36"x16' Rockford.
- 1-36"x30"x14' N. B. P.
- 1-30"x30"x8' N. B. P.
- 1-26"x26"x8' Gray.
- 1-24"x24"x8' American.

PUNCHES

- 1-No. 4 Covington.
- 1-No. 4 Kling.

PRESSES

- 1-96-G Toledo Dble. Crank, 146"
between housings.
- 1-No. 164 Toledo Toggle.

BORING MILLS—Vertical

- 2-72" Gisholt.
- 1-60" Colburn.
- 2-36" Bullard, New Era.
- 1-24" Bullard, New Era.

BORING MILLS—Horizontal

- 1-No. 0 Fosdick.
- 5-No. 1 Barrett.
- 6-2" Bar Rockford.

DRILL PRESSES

- 1-No. 14 Natco.
- 1-No. 2 Baush.
- 1-6 spindle Henry & Wright.
- 1-22" Barnes, S. D.
- 1-28" Rockford.
- 2-No. 314 Baker.
- 2-No. 14 Colburn.
- 1-No. 24 Foote-Burt.

SLAB MILLERS.

- 6-24"x24"x12' Ingersoll.
- 1-24"x24"x8' Ingersoll.
- 1-24"x12"x20' Ingersoll.
- 1-32"x32"x12' Ingersoll.

GRINDERS

- 2-23" P. & W. Vert. Surf.
- 1-24"x96" Norton.
- 2-14"x72" Norton.
- 3-14"x56" Norton.
- 1-12"x10" Landis.
- 5-10"x56" Norton.
- 3-10"x36" Norton.
- 2-10"x24" Norton.
- 6-6"x32" Norton.
- 1-No. 60 Heald.
- 3-No. 70 Heald.

**Our Guarantee: Your money back if you
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24"x10' Monarch Quick Change Gear Lathe.
No. 5 LeBlond Heavy Duty Plain Miller (Motor Drive).
4' Drees Plain Radial, Late Type.
24" Gisholt Turret, 2 Step Cone, 6¼" Hollow Spindle.
No. 64 Consolidated S. S. Press, 4" Stroke.
25" Smith & Mills Back Geared Crank Shaper.
No. 2 Brown & Sharpe Surface Grinder.
42" Bullard Vertical Boring Mill, 2 Heads.
No. 0 Giddings & Lewis Horizontal Boring Mill, 3½"
Bar, A. C. Motor Drive.
50 Ton Lucas Power Forcing Press.
60" Robinson Power Square Shear, 14 Gauge.

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Warehouse and Shop Located at
528-530 East Front St. Cincinnati, Ohio

The Jones Machine Tool Co.

WAYNE Greater Values

11"x 4' Oliver Lathe, Geared Head, motor drive	\$200.
14"x 6' Sidney Lathe, q. c., 3-step cone, dbl. back gear	250.
16"x 6' Flather	75.
16"x 9' Chard Lathe, q. c., 3-step cone, double back gear, late	425.
16"x 6' Pratt & Whitney Geared Hd., taper, motor dr.	600.
18"x 8' Hendey, taper	400.
18"x 8' Cincinnati, Turret on Shears	250.
18"x 8' Lodge & Shipley, quick change taper	375.
18"x 10' Lodge & Shipley, quick change	375.
18"x 10' Star, loose change	250.
20"x 10' LeBlond quick change	400.
20"x 14' LeBlond loose change, taper	375.
22"x 10' Niles loose change	300.
30"x 12' Star, loose change	300.
42"x 16' Niles triple geared	600.
3x36 Jones & Lamson, chucking	250.
3x36 Pratt & Whitney Turret	600.
No. 6 Foster Turret, air chuck	350.
3' American Radial, cone drive	475.
4' Bickford Radial, single pulley, gear box	600.
No. 3 Brown & Sharpe Universal, complete	900.
20" Queen City Shaper, back geared	500.
24" Barker Shaper, back geared	400.
42" Throat Lenox Splitting Shear, $\frac{3}{4}$ " capacity	500.
24"x6' Ingersoll Slab Miller	500.

Wayne Machinery Company
FORT WAYNE, INDIANA

**We have a large stock of
machinery of all kinds.**

**We specialize, however,
in good used and**

Rebuilt Lathes

**Our rebuilt lathes are
guaranteed to be equal to
new and they are priced
right!**

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A. R. Marsh Machinery Co.
4900 West 73rd St., Cleveland, Ohio

Forging, Bolt, Nut, Rivet and Structural Machinery

1", 1½", 2", 2½", 3", 4", 5" Ajax Upsetters.
¾", 1", 1½", 2½", 3" and 4" Acme Upsetters.
1" and 2" National Upsetters, iron beds.
Nos. 2, 3, 4, 5, 6 and 7 Williams-White Bulldozers.
No. 9 Williams & White Bulldozer, weight 86,000 lbs.
50, 75, 100, 150, 200 and 500 lb. Bradley Upright Hammers.
40, 60, 80, 100 and 200 lb. Bradley Cushioned Helve Hammers.
2000 lb. Chambersburg, late type Steam Drop Hammer.
1000 lb. Billings & Spencer Board Drop, purchased 1923.
No. 14 Erie Geared Trimming Press, wt. 22,000 lbs.
No. 52 Bliss straight side press.
No. 55½ and No. 56 Toledo Geared Trimming Presses.
No. 5 Stiles Solid Back, Single Geared Press, Motor Drive.
No. 2 Doelger-Kirsten Alligator Shear, cap. 2¾" round.
Williams-White Bar Shear cap. 1½"; Guillotine Shears 1½", 4".
United Engineering & Foundry Bar Shear, capacity 3" round.
1", 1½" 4" Single Spindle Landis Threading Machines.
½", 1", 1½", 2", 2-spindle Landis Threading Machines.
1½", 2", 2-spindle Acme Class A Threading Machines.
¾", 1", 1½" 6 & 8-spindle Vertical Semi-auto. Nut Tappers.
¾", ¾", ½", ¾" and 1" Thread Rollers.
No. 10 Waterbury side feed, ¾" cap., Thread Roller.
11 Waterbury and Manville Cold Headers, 3/16" to 1".
Plate Shear, capacity 8' of 1".
Long & Allstate Multiple Punch, 84" ram, weight 26,000 lbs.
L. & A. Size B Dbl. End Punch, 18" thrt. each end, 2¼" thru 1½".
Rock River Sgl. End Punch, 16" thrt., arch. jaw, cap. ¾" thru ¾".
Beatty Sgl. End Punch, 26" thrt., plain table, cap. 1" thru 1".
No. 6 Whiting Sgl. End Punch, arch. jaw, cap. ¾" thru ¾".
Ryerson Combination Punch, Bar and Angle Cutter.
Allen Pinch Bug Riveter, cap. ¾" rivets.
No. 3 Ryerson high speed Friction Saw, cap. 24" beams.
No. 2 Ajax Hot Saw and Burring Machine.
12' Wall Radial Drill for structural work.
Detroit 5-spindle Semi-automatic Drills.
Baker, R. & L. & Elwell-Parker Elec. Elevating Platform Trucks.
Ideal Auto. Loading Tumbling Barrel; Reg. Tilting Tumb'g Barrel.
Wire Straighteners, 3/16", 5/16", ½", ¾" cap.
100,000 lb. Tinius Olsen Testing Machine, motor drive.

Donahue Steel Products Co.

Specialists in Forging, Bolt, Nut and Rivet Machinery

74th and Ashland Ave.,

Chicago, Ill.

A Few Listings From a Stock of 1500 "Restored" Machines

24" Bullard New Era Boring Mill.
36" Bullard Rapid Production.
No. 0 Giddings Lewis Horizontal.
No. 21 Lucas Horizontal.
8" Bar Barrett Horizontal.
7" Bar Barrett Horizontal.
72" N-B-P Vertical Rapid Traverse.
96" Niles Vertical.
10" Niles Vertical.
10—16" Niles.
Cone 4-spindle automatic 1 1/4".
Gridley 4 spindle 3/4", 1 1/4", 1 3/4", 2 1/4".
Brown-Sharpe Nos. 0, 00, 2 and 2-G.
Landis Grinder 16x52".
Norton 6"x32", to 18"x96".
Diamond Face 30"x84".
Pratt & Whitney Vertical No. 14
Blanchard No. 16, 26".
Brown & Sharpe Univ. Nos. 1, 2, 13.
Brown & Sharpe Surface No. 2.
Dresses Plain Radial 4', 5'.
American Triple Purpose 3', 5, 6'.
American Triple Geared 3', 4', 5'.
Western Plain 5', 7'.
Nasco Multiple No. 14, No. 32.
Baush Multiple Nos. 2, 3, 4.
Cincinnati-Bickford 3 1/2', 5', 6'.
Warner-Swasey Turret, Nos. 3A, 2A.
Warner-Swasey Universal No. 4.
Warner-Swasey Screw Mche. No. 4.
Libby Turret 18", 26".
Steinle Turret 42".
Pratt-Whitney Auto Miller, 5", 12".
Brown-Sharpe Univ. Nos. 1 1/2, 2A, 4.
Milwaukee universal Nos. 3-B, 2-B.
Hendey Universal No. 1-B, No. 2.
Cincinnati vert., Grd. Hd. No. 2, 3, 4.
Cincinnati Pl., Grd. Hd., Nos. 2, 3, 4, 5.
Cincinnati Pl. Intermittent Feed No. 5.
Milwaukee Plain Nos. 2-B, 3-B.
B. & S. Gear Cutter, 72", 60", 36".
Cincinnati Gear Cutter 36".
Pratt-Whitney Gear Cutter, 90", 104".
Gleason Planer, 24", 36", 54".
Gleason Generator 3", 6", 11", 18".
Barber-Coleman Hobbers No. 12.
Lees-Bradner Hobber No. 5-A.
Gould & E. Gear Cutter 48", 72".
P-Johnson Univ. Shaper, 15", 24".
G. & E. Shaper, 16", 20", 24", 32".

American Shaper, 16", 20", 24"
Queen City Shaper 28".
Cincinnati Shaper 16", 20, 24", 32".
Newton Rotary Planer, 84".
Sellers M. D. 10"x10"x24".
Pond M. D. 84"x84"x15".
D. & H. Openside 72"x72"x18".
Cincinnati M. D. 48"x48"x10".
Cincinnati M. D. 36"x36"x8".
Whitcomb-Blaisdell 24"x24"x12".
86"x30" Putnam M. D. Lathe.
72"x58" Niles-Bement-Pond M. D.
50"x20" Putnam M. D.
48"x36" Pittsburgh M. D.
48"x21" Niles-Bement-Pond M. D.
42"x39" Putnam M. D.
42"x50" American M. D.
42"x50" Putnam M. D.
42"x18" American M. D.
36"x20" American M. D.
30"x12" Lodge & Shipley Grd. Hd.
30"x12" American Geared Head.
26"x22" Boye & Emmes M. D.
28"x28" Hamilton M. D.
24"x10" American.
20"x10" Monarch.
18"x8" Lodge & Shipley.
18"x8" Greaves-Klusman.
14"x8" Hendey Tool Room.
12"x5" Hendey Tool Room.
No. 77 Bliss Press.
No. 55 Ferracute Drawing.
Lucas Forcing 15-Ton.
Metalwood Straightening 60-Ton.
No. 1 Bliss Toggle.
No. 37 1/2 Bliss SS.
Metalwood Forcing 15-ton.
No. 20-C Bliss Inclined.
No. 4-P Ferracute.
Nos. 7 and 8 Greenbergs.
Ajax Upsetter S. B. 3/4", 1 1/4".
Ajax Upsetter S. B. 2", 2 1/2", 3 1/2".
Acme Upsetter 1 1/2", 2 1/2", 3".
Cincinnati Rotary Tables 20".
Pratt & Whitney Die Sinker No. 3.
Ingersoll Compressor 12"x12".
Acme Nut Tapper 6-spindle.
Nazel Hammer No. 4-B.
Chambersburg Drop 2500 lb.
Newton Slotter 15".

Write for "Simmons Pictorial News"

Simmons Machine Tool Corp.

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REBUILT

**Bath Universal
Grinding Machines**

And

**Fitchburg Plain Cylindrical
Grinding Machines**

**Guaranteed as Accurate
as New Machines**

Fitchburg Grinding Machine Corp.
Fitchburg, Mass.

Special Prices on following: We need the floor space

36"x36"x15' Betts heavy planer, 2 heads on rail.

16"x96" Landis plain grinder, pump and rests.

14"x72" Norton plain grinder, pump and rests.

15" Dill slotter, rotary table, nearly new.

38"x14' Fifield engine lathe, rebuilt.

All in very good condition. Slotter used very little.

PRESSES

No. 165 Consol. dbl. crk. 2½" str.
36" between hous. Flywheel.

No. 540 Max Ams straight side,
geared, 8" stroke.

No. 56 Toledo Trimming, straight
side 8" stroke.

No. 126 Ams inclinable, 2" stroke.

No. 58 Niagara Trimming, straight
side, 4" stroke.

No. 151 Ferracut, geared twin
drive 13" stroke 150 ton cap.

No. D-201 Ferracut, dbl. geared,
straight side twin drive, 8 & 24"
strokes.

SCREW MACHINES and TURRET LATHES

No. 00 B. & S. auto. ser. 5802-5803.

¾-½" Cleveland model A, double
cross slides.

¾-½" Cleveland Model B, double
cross slides.

¾" Cleveland model A, ser. 31820,
never used.

21" Gisholt turret, 3½" hole.

Several brass lathes, Warner-Swasey, Drees etc.

21" Libby full awing, 4½" hole.

No. 0 B. & S. hand, ¾" cap.

No. 1 B. & S. hand, ¾" cap.

¾" P. & W. hand, 19 collets.

No. 1 Garvin hand, ¾" cap.

1½" Milholland hand.

No. 6 Foster turret lathe.

DRILLS

36" Cincinnati Bickford, gr. box.

34" Cincinnati Bickford tap. att.

No. 2 4-sp. Foote Burt gang drill.

28" Barnes b. g. drill.

PUNCHES and SHEARS

146" Streine, 10 ga. New Shear.

No. 2 Doelger & Kirsten all. shear.

No. 18 Carlins alligator 2¼" cap.

No. 5 United alligator, 3¼" cap.

No. 2 Carlins, alligator 5" cap.

Niagara ring and circle, 14 ga.

36" Peerless foot shear, 18 ga.

No. 13 Wms. White punch, 18 tr.

No. 15 Wms. White punch, 18 tr.

MILLING MACHINES

Nos. 3, 5 & 6 Becker vertical.

No. 3 Kempamith plain, ex. cond.

No. 2 Cincinnati universal, index
centers, vice etc.

No. 3 LeBlond vertical attach.

No. 1 Rockford 10" index centers.

No. 0 Brown & Sharpe hand
millers, rebuilt.

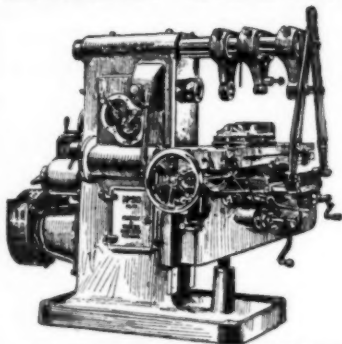
No. 3 Barber Colman gear hobber, vertical attach. for worm
wheels, one hob, all change gears. Nearly new. BARGAIN

A. D. White Machinery Co.

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Chicago, Ill.

LIKE NEW—



**Cost
Much
Less**



Factory Rebuilt Milwaukee Milling Machines
that will satisfy both your Production and Purchasing Departments. Genuine MILWAUKEE MILLERS—rebuilt at the factory. Every machine is completely disassembled, re-scraped, and new parts used wherever needed. They carry the same accuracy guarantee as our *new machines*. Better write today—

THESE ARE STILL AVAILABLE

No. 1A Manufacturing
No. 1B Plain
No. 2B Vertical
No. 2AS Mfg. M. I. B.
(Motor-in-Base)
No. 2A Manufacturing
No. 2BS Plain

No. 2B Plain
No. 2B Universal
No. 3B Plain
No. 3B Universal
No. 3B Vertical
No. 4B Plain

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MILWAUKEE MILLING MACHINES
KEARNEY & TRECKER

CORPORATION

5926 National Ave.,

Milwaukee, Wisconsin

Our Latest Design of Cone Driven Lathes PRACTICALLY NEW

18"x 8' 3-Step Cone, Double Back Gear.

18"x10' 3-Step Cone, Double Back Gear.

20"x10' 3-Step Cone, Double Back Gear.

20"x12' 3-Step Cone, Double Back Gear.

24"x10' 3-Step Cone, Double Back Gear.

**The above lathes are being
replaced in our shop by our
Coneless Lathes**

ALSO

1—28"x12' Old Style Quick Change Gear,
Double Back Gear, Cone Driven Lathe.

Full description and prices upon request

The Boye & Emmes Machine Tool Co.

2245 Spring Grove Ave., Cincinnati, Ohio

Special Bargains

-IN-

Used Machine Tools

- B-1558**—42"x22' William Gleason Engine Lathe, belt drive, with 5-step cone and double back gear and internal face plate drive; lathe takes 14' 6" between centers; swings over bridge of carriage 32"; compound rest with power feed, also power cross and longitudinal feed; screw cutting and loose change gears; solid spindle; one large steady rest taking about 27", and one small steady rest taking about 16", together with countershaft.....**\$950.00**
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- B-2062**—Putnam 26"x12' Quick Change Gear Screw Cutting Engine Lathe, 3-step cone, 5" belt, double back gear, single tight and loose countershaft, compound rest, large and small face plates, cabinet legs, and two steady rests 12½" and 16" cap. **\$450.00**
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20 HP. 1200 RPM.	155.00	75 HP. 600 RPM.	300.00

1 Phase, 60 Cycle, 110 or 220 Volts, A. C. Current.

¼ HP. 1750 RPM.	\$ 8.00	2 HP. 1800 RPM.	\$ 50.00
½ HP. 1750 RPM.	25.00	2 HP. 1200 RPM.	65.00
1 HP. 1750 RPM.	32.50	3 HP. 1800 RPM.	70.00

Midland Equipment Company

Tel. Haymarket 3994

612 Van Buren St.,

Chicago, Illinois

Wood-Working Machinery

For a large list of new and used wood-working machinery and allied equipment, consult **Wood-Working Machinery**—a publication similar to this but devoted to the advertising of saw-mill and wood-working machines. A copy may be had free on application to the publisher.

Hitchcock Publishing Co.,

508 So. Dearborn St.,

Chicago, Ill.

Stop Wasting Time and Money

Use

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(Patented July 12, 1921—No. 1,384,154)



They
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*Standardized and Used in Shops where
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Carried in stock by Leading Jobbers

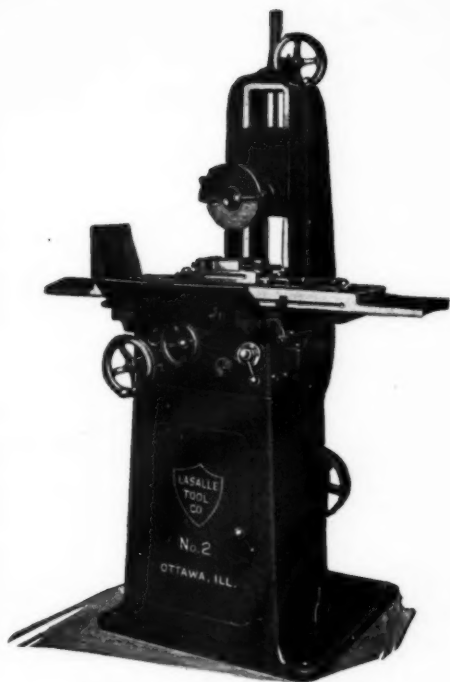
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200 Varick St., New York, N. Y.

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PRODUCTS

"Speed-Up Production"

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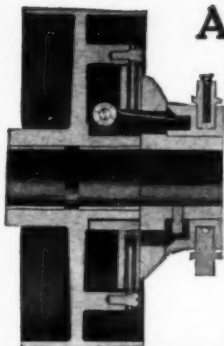
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"A Dependable Grinder"

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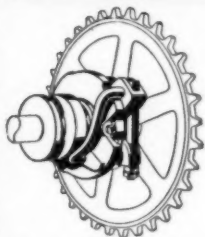
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Completely enclosed, has underslung levers, interchangeable parts, perfect balance, with a full length bearing and steel discs. Actuating parts chrome nickel steel, heat treated.

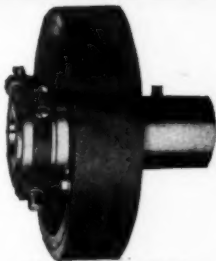
There's nothing like the new Conway Clutch for continuous trouble free performance.

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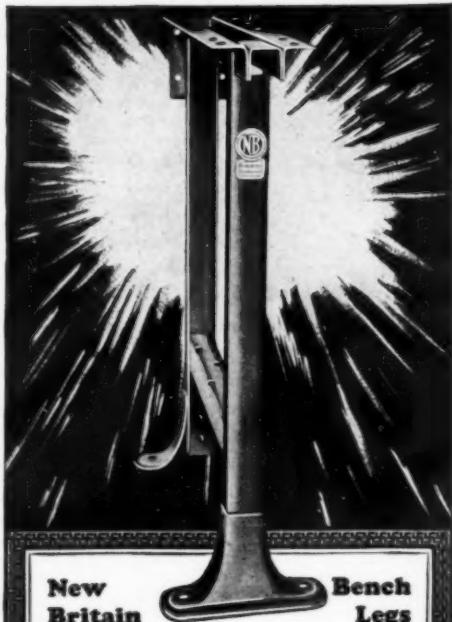


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Full floating band type with all the features of the compression type. Has cut steel gear and pinion adjustment easily accessible. Adaptable to enclosure. Suited to external brake mounting.

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A big feature—more and stiffer benching with less legs—resulting in lower bench costs. Easy to install—last forever.

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